

FINAL REPORT

TOWN OF LEESBURG



COMPREHENSIVE PARKING STUDY

Submitted To:

TOWN OF LEESBURG

25 W. Market Street
Leesburg, Virginia 20178

Submitted by:

DESMAN
A S S O C I A T E S

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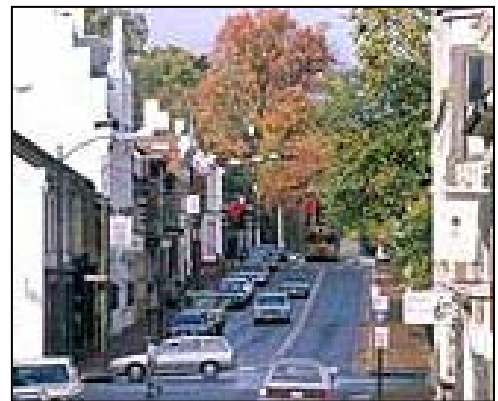
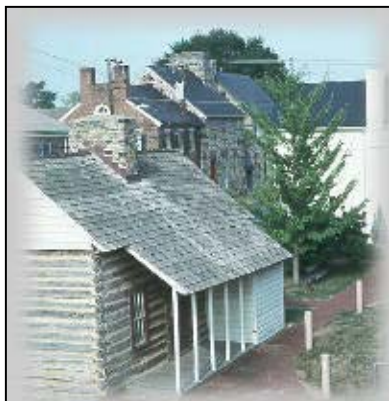


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Section I - Assessment of Existing Parking Conditions

Introduction

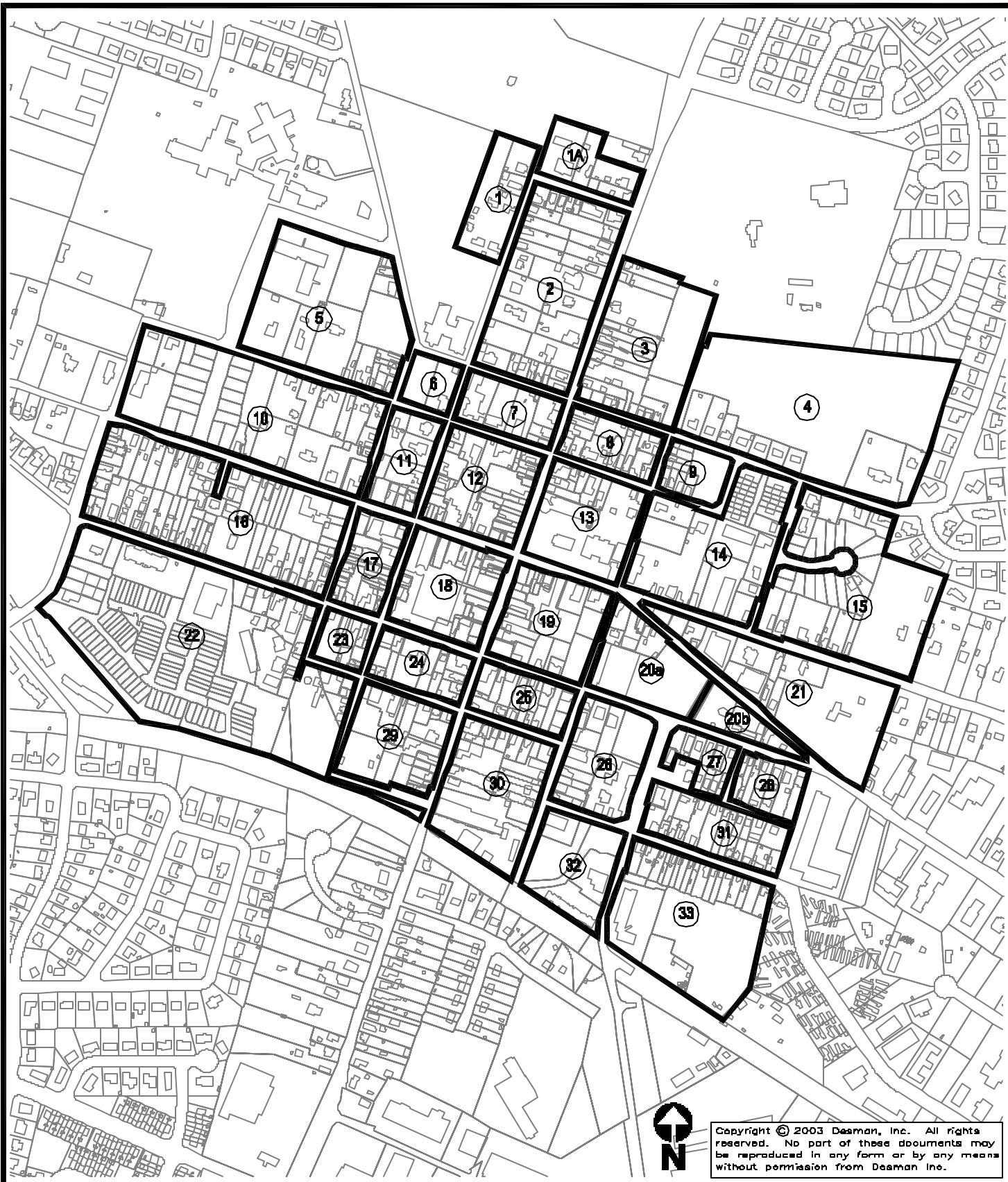
Phase I Report introduces the existing parking inventory (on vs. off street), peak parking utilization, and ownership (public vs. private/restricted). The inventory and utilization information will be summarized to identify relative parking surplus and deficit conditions. Also, the information represents the foundation upon which future needs will be projected.

Study Area Boundaries

The map on Exhibit 1 illustrates the primary study area boundaries along with the block coding that was used to collect data. The off-street private/restricted and public parking along with on-street parking was observed within this area. A detailed inventory of all parking within the study area was collected by the Town of Leesburg and provided to DESMAN for analysis.

Parking Inventory

The parking supply in any municipality consists of publicly available off-street parking (garage and lots), private/restricted off-street parking (garage and lots), and on-street parking. Publicly available parking is defined as those spaces available to the general public regardless of trip purpose. Thus, a publicly available garage or lots could be publicly or privately owned and operated. In contrast, private/restricted parking is only available to specific users. An example would include the parking garage for the county government as that garage is reserved specifically for government employees and the county building patrons. All other users are prohibited. On-street parking is available to anyone regardless of trip purpose. However, the Town of Leesburg has established restrictions on on-street parking in order to encourage turnover and maximize utilization along retail corridors or to restrict parking to specific users in residential areas. On-street parking along commercial corridors is best suited to serving short-term parking given its convenience and access. Therefore, long-term parking (employees) should be discouraged through meter rates, time limits, and enforcement. These definitions are important when determining a downtown's available parking supply and therefore, peak period surplus or deficit. Parking which is restricted to specific users cannot be counted on to satisfy the larger needs of the general public.



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STUDY AREA BOUNDARY/BLOCK CODING

TOWN OF LEESBURG, VIRGINIA

Exhibit No.

1

Off-Street Parking Inventory

To give a clear understanding of the value and findings associated with parking inventory and utilization data, a description of how the parking data was collected is needed.

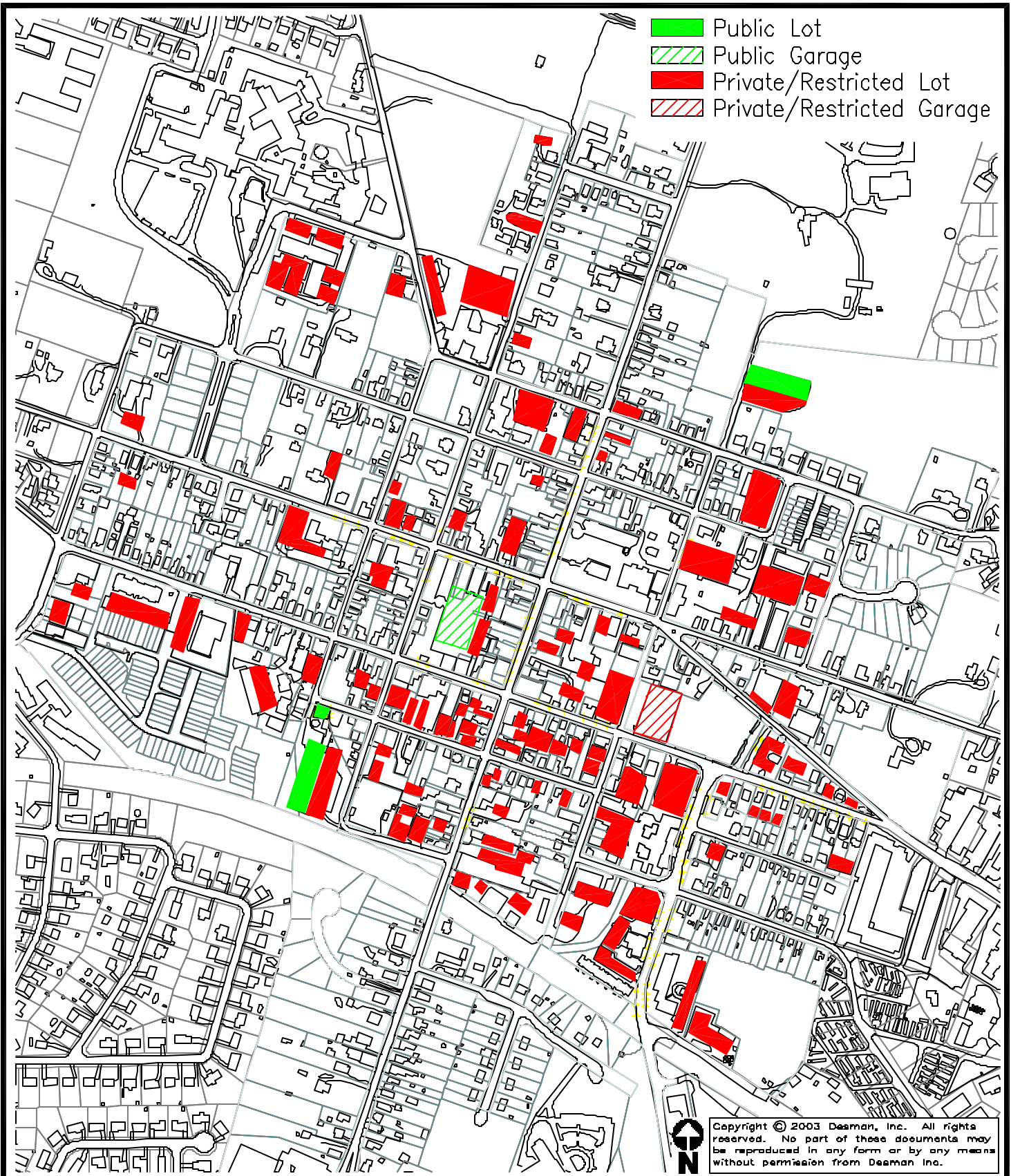
Like all other studies, the inventory of all parking within the study area was attempted to be collected; public, private/restricted, off-street and on-street. During this process the Town of Leesburg identified publicly owned and publicly available parking as well as those facilities that are private/restricted. DESMAN used the inventory gathered to collect parking utilization data by physically accessing lots and garages. Exhibit 2a identifies the location of all surface lots and parking garages within the study area boundaries. The private/restricted parking lots/garages are coded red and public parking lots/garages are coded green. Exhibit 2b identifies the parking space type after 5:00 PM and on weekends.

Table 1 presents the actual supply of publicly available and private/restricted off-street parking within the study area. Detailed block by block data that note the location, type (lot or garage), capacity, operation (public vs. private/restricted), and restriction was also collected and is included in the appendix section of this report (Appendix Exhibit A). Based on this survey, a total of 496 publicly available and 3,544 private/restricted off-street spaces exist within the study area, for a total of 4,040 off-street spaces.

Table 1

Off-Street Parking		
Public	Private/ Restricted	Total
496	3,544	4,040
12%	88%	

As in a typical urban area, the number of private/restricted parking spaces is greater than the number of publicly available spaces. In this case 88% of the supply is private/restricted. This is simply the result of a developer's or property owner's requirement for on-site parking because of zoning requirements or market pressures for a project's "vehicular accessibility". For example, leasing agents will have much greater success renting a property to a prospective commercial or residential tenant if the property has sufficient on-site parking. As such the developer hopes to maximize parking on-site at the lowest cost possible. However, as the Town of Leesburg



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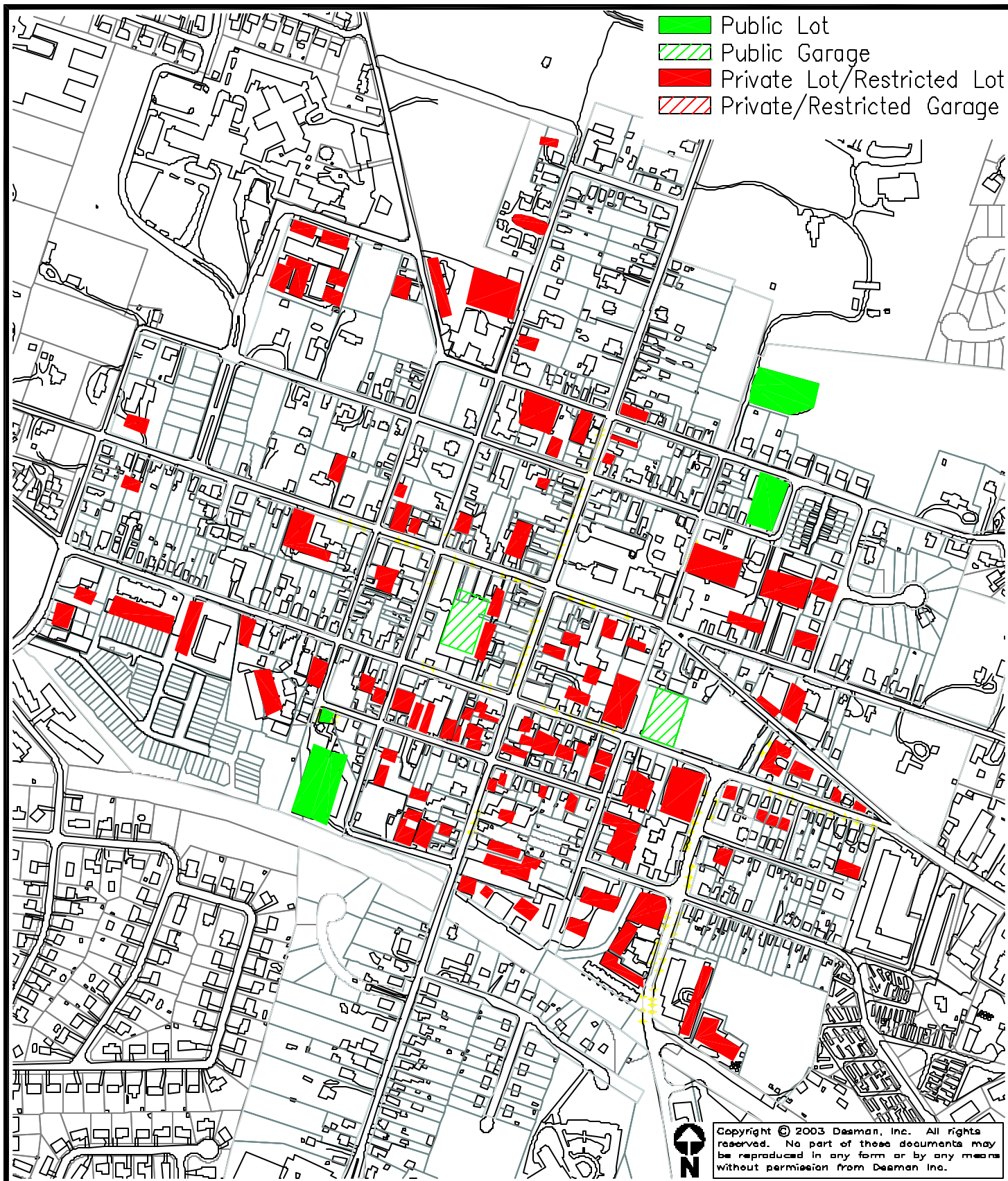
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WEEKDAY OFF-STREET PARKING

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2a



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EVENING/WEEKEND OFF-STREET PARKING

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Exhibit No.

2b

represents a historic downtown, formed long before the dominance of the single occupancy automobile culture, on-site parking is limited if not physically impossible to provide. As a result, property owners and developers pressure the municipality to provide the required parking “infrastructure”.

Off-Street Peak Period Utilization

A two hour interval on and off-street parking occupancy survey was conducted on Tuesday August 12, 2003 between the hours of 9:00 AM and 5:00 PM in an effort to capture the typical weekday morning, mid-day, and afternoon parking utilization data. A weekday rather than a weekend day was selected as the consultant and Town representatives believe that parking demand is highest on weekdays (Town government, County government, and private sector offices are active) Appendix Exhibit B present the results of the parking occupancy survey of off-street spaces on a block by block basis, while Table 2a presents a summary of the off-street utilization throughout the survey day and Table 2b summarizes the off-street peak period utilization for both public and private/restricted parking facility. In total, 2,632 of the 4,040 off-street spaces were occupied during the peak period of utilization, or only 65%. This would initially indicate that a large surplus of parking spaces presently exists. When the peak period occupancy data for both the public and private/restricted was examined separately, the data confirms that each parking space type have a large surplus of spaces. Of the 496 publicly available spaces, 58% of the spaces were occupied during the peak period and 66% of the 3,544 private/restricted spaces were utilized during the peak period.

Table 2a

Off-Street Occupancy Survey				
9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
1,415	2,477	2,632	2,397	986
35%	61%	65%	59%	24%

Table 2b

Off-Street Surplus/Deficit					
	Parking Supply	90% Operational Capacity	Peak 1:00 PM	% Occupied	Surplus/Deficit
Public	496	446	286	58%	160
Private/Restricted	3,544	3,190	2,346	66%	844

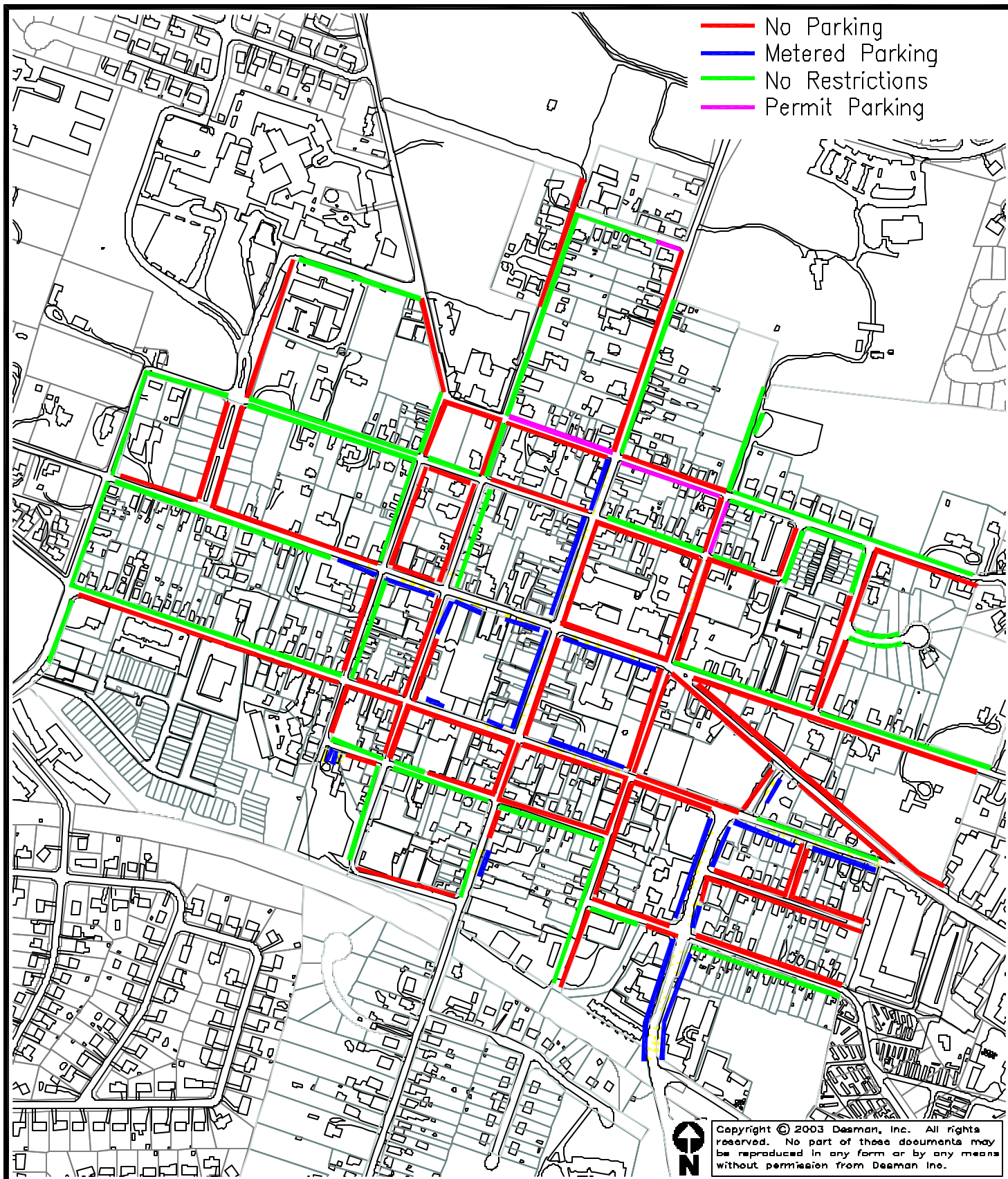
A more in depth analysis of parking utilization and relative space surplus or deficit must consider a lot, garage or parking systems' practical capacity. Practical capacity relates to an operational efficiency of a parking facility. A parking facility is perceived by its users to be at full operational capacity when occupancy levels reach 85-90%. Once this level is exceeded, potential parkers find it difficult to locate an available space. As a result, those individuals must continue to search, creating traffic flow problems and increasing the potential for vehicle/vehicle and vehicle/pedestrian conflict. The effective and efficient turnover of convenient parking spaces is most successful when the supply of spaces exceeds the peak demand for those spaces by 10-15%. For this study's purpose 90%, the more conservative practical capacity, will be used.

With that introduction, a more critical analysis of the public parking system would indicate that, at present, a surplus of 160 spaces exists. The majority of the available off-street public spaces can be found in the Pennington Lot located off North Street. On the other hand, the relatively low occupancy level (66%) associated with private/restricted lots is indicative of the protective nature of such facilities and their relationship to one owner/operator. For example, a parking lot that is owned by a restaurant that has a high demand in the evening and low demand during the daytime will exhibit low daytime occupancy figures. As that lot is reserved for restaurant patrons and employees, the law office next door, for example, that has high daytime demand will be unable to use that lot. As such, a significant supply of private/restricted spaces is unutilized even during the peak daytime period.

On-Street Inventory

Like off-street parking, on-street parking spaces were inventoried and surveyed to determine their location, restrictions, and peak weekday utilization (Appendix Exhibit C). Typically, on-street parking is provided to expand upon the supply of spaces available to the general public and to serve those patrons who require high turnover, in easily accessible locations. Traditionally, these spaces are intended to serve patrons of shops and/or restaurants. As such, restrictions (through meters and/or enforcement) are placed on the duration of stay a vehicle is allowed to remain parked. Meter rates in the Town of Leesburg range from \$.25 for 30 min, around the County buildings, to \$.35 for 3 hours for meters heading out of the downtown area on Harrison St.

Exhibit 3 presents a graphic illustration of the location and types of on-street parking restrictions in downtown Leesburg. In addition to the parking restrictions noted on the graphic, there are



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ON-STREET PARKING

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Exhibit No.

3

other minor restrictions, including no parking except for Sundays. It appears that the parking inventory is dominated by spaces with no restrictions placed on them.

Table 3 shows the surveyed number of on-street spaces by restriction. Of the total of 724 on-street spaces in the study area, 571 (79%) have no restrictions (non-metered) and 145 (20%) are metered.

Table 3

On-Street Parking Supply			
Nonmetered	Metered	Loading Zone	Total
571	145	8	724
79%	20%	1%	

On-Street Peak Period Utilization

Appendix Exhibit D presents the peak period utilization figures by block for all on-street spaces while Table 4a summarizes those findings. Just as in off-street, the highest occupancy was observed at 1:00 PM with 377 or 52% of the 724 spaces occupied. Table 4b summarizes the survey findings by on-street space type and Table 4c summarizes the on-street peak period utilization. During the peak period there is a surplus of 275 parking spaces.

Table 4a

On-Street Occupancy Survey				
9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
374	374	377	367	294
52%	52%	52%	51%	41%

Table 4b

On-Street Survey of Nonmetered/Metered Spaces						
On-Street	Capacity	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
Nonmetered	571	290	285	275	274	218
Metered/Loading Zone	153	84	89	102	93	76
Total	724	374	374	377	367	294

Table 4c

On-Street Parking Surplus/Deficit				
Capacity	90% Practical Capacity	Peak 1:00 PM	% Occupied	Surplus/Deficit
724	652	377	52%	275

Summary of Existing Conditions

Table 5 shows both the on and off street supply and peak utilization. There is a total of 4,764 parking spaces and during the peak period 3,009 (63%) are utilized. Exhibit 4 and Table 6 illustrate on and off-street public parking occupancy and surplus/deficit by block. During the peak period, 55% of the 1,189 publicly available spaces were occupied during the 1:00 PM peak period with a surplus of 620 public spaces.

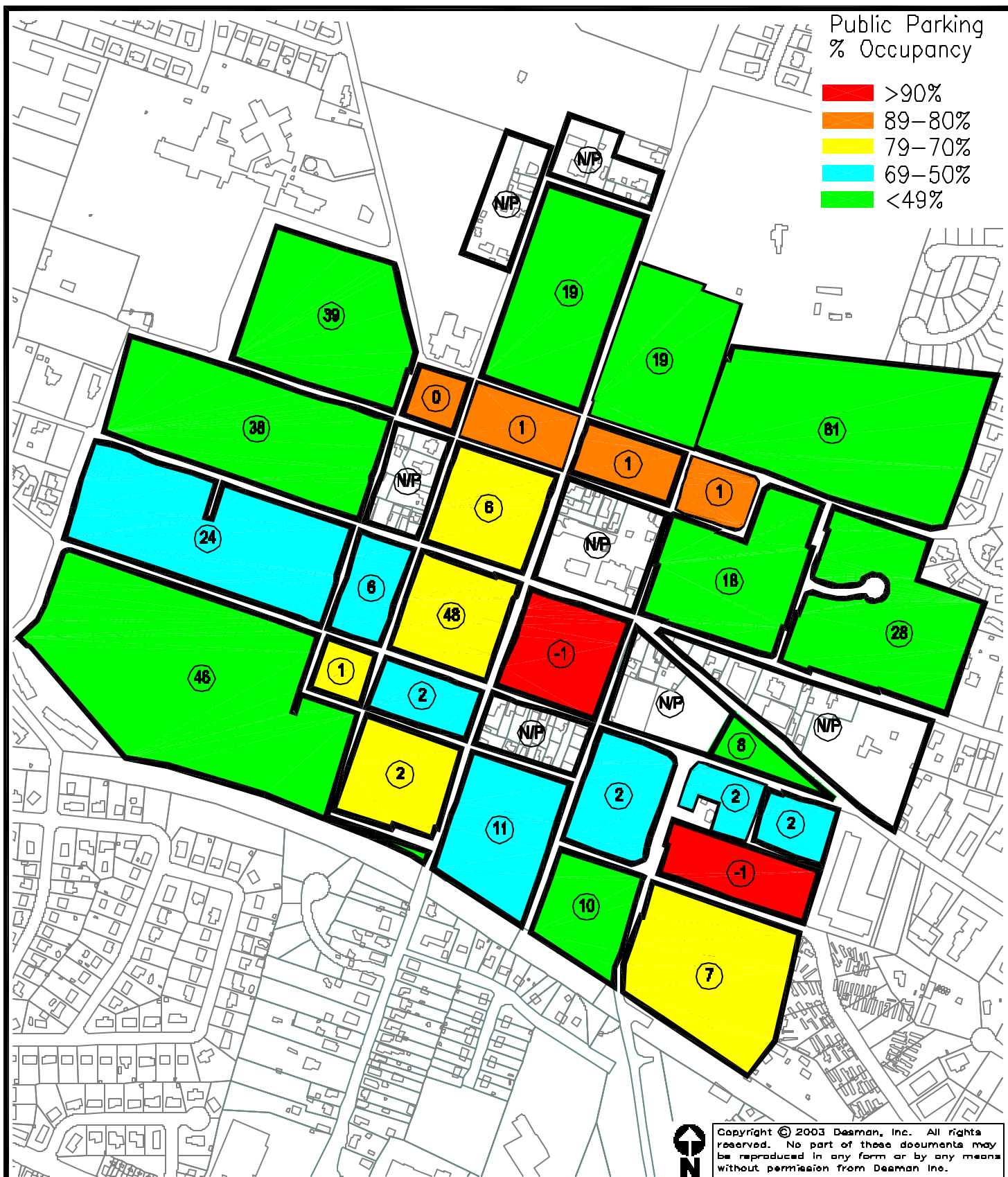
At this time, the Town of Leesburg does not have public or private parking deficit. However, the majority of the public parking surplus is not located where parkers wish to park, making parking in downtown Leesburg seem inconvenient to patrons. However, while this surplus might be adequate for today's demand, parking impacts created by future development activity that will be analyzed in the next section of this report could identify potential parking deficits.

Table 5

Public and Private Restrict On and Off-Street Surplus/Deficit					
Block	Capacity	Practical Capacity (90%)	Peak Occupancy (1:00PM)	%	Surplus/ Deficit
1A	---	---	---	---	---
1	187	168	141	75%	27
2	51	46	12	24%	34
3	54	49	32	59%	17
4	233	210	53	23%	157
5	495	446	356	72%	90
6	8	7	7	88%	0
7	90	81	49	54%	32
8	45	41	28	62%	13
9	91	82	77	85%	5
10	93	84	30	32%	54
11	51	46	38	75%	8
12	109	98	69	63%	29
13	---	---	---	---	---
14	254	229	190	75%	39
15	50	45	17	34%	28
16	194	175	48	25%	127
17	56	50	42	75%	8
18	451	406	331	73%	75
19	252	227	206	82%	21
20a	421	379	372	88%	7
20b	53	48	32	60%	16
21	87	78	45	52%	33
22	330	297	145	44%	152
23	25	23	17	68%	6
24	117	105	84	72%	21
25	94	85	73	78%	12
26	161	145	123	76%	22
27	38	34	23	61%	11
28	15	14	10	67%	4
29	125	113	72	58%	41
30	157	141	111	71%	30
31	20	18	19	95%	-1
32	238	214	102	43%	112
33	119	107	55	46%	52
Total	4,764	4,288	3,009	63%	1,279

Table 6

Public On/Off-Street Parking Surplus Deficit					
Block	Capacity	90% Practical Capacity	Peak Occupancy 1:00 PM	%	Surplus/Deficit
1A	0	0	0	---	---
1	0	0	0	---	---
2	28	25	6	21%	19
3	35	32	13	37%	19
4	136	122	41	30%	81
5	63	57	18	29%	39
6	8	7	7	88%	0
7	18	16	15	83%	1
8	16	14	13	81%	1
9	11	10	9	82%	1
10	58	52	14	24%	38
11	0	0	0	---	---
12	43	39	33	77%	6
13	0	0	0	---	---
14	39	35	17	44%	18
15	50	45	17	34%	28
16	61	55	31	51%	24
17	20	18	12	60%	6
18	324	292	244	75%	48
19	17	15	16	94%	-1
20a	0	0	0	---	---
20b	13	12	4	31%	8
21	0	0	0	---	---
22	108	97	51	47%	46
23	9	8	7	78%	1
24	5	5	3	60%	2
25	0	0	0	---	---
26	8	7	5	63%	2
27	7	6	4	57%	2
28	7	6	4	57%	2
29	16	14	12	75%	2
30	28	25	14	50%	11
31	4	4	5	125%	-1
32	22	20	10	45%	10
33	35	32	25	71%	7
Total	1,189	1,070	650	55%	420



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Public On/Off-Street Peak Occupancy
and Surplus/Deficit

TOWN OF LEESBURG, VIRGINIA

Exhibit No.

4

Section 2 - Assessment of Future Parking Conditions

Introduction

This phase of the report evaluates future parking needs under short, mid and long term conditions. As such, the analysis that follows contains known, proposed and potential development projects by type, size, and location. It also introduces various parking factors and adjustment used to estimate peak demand. Finally, the analysis estimates future parking deficits by block given these developments' impacts.

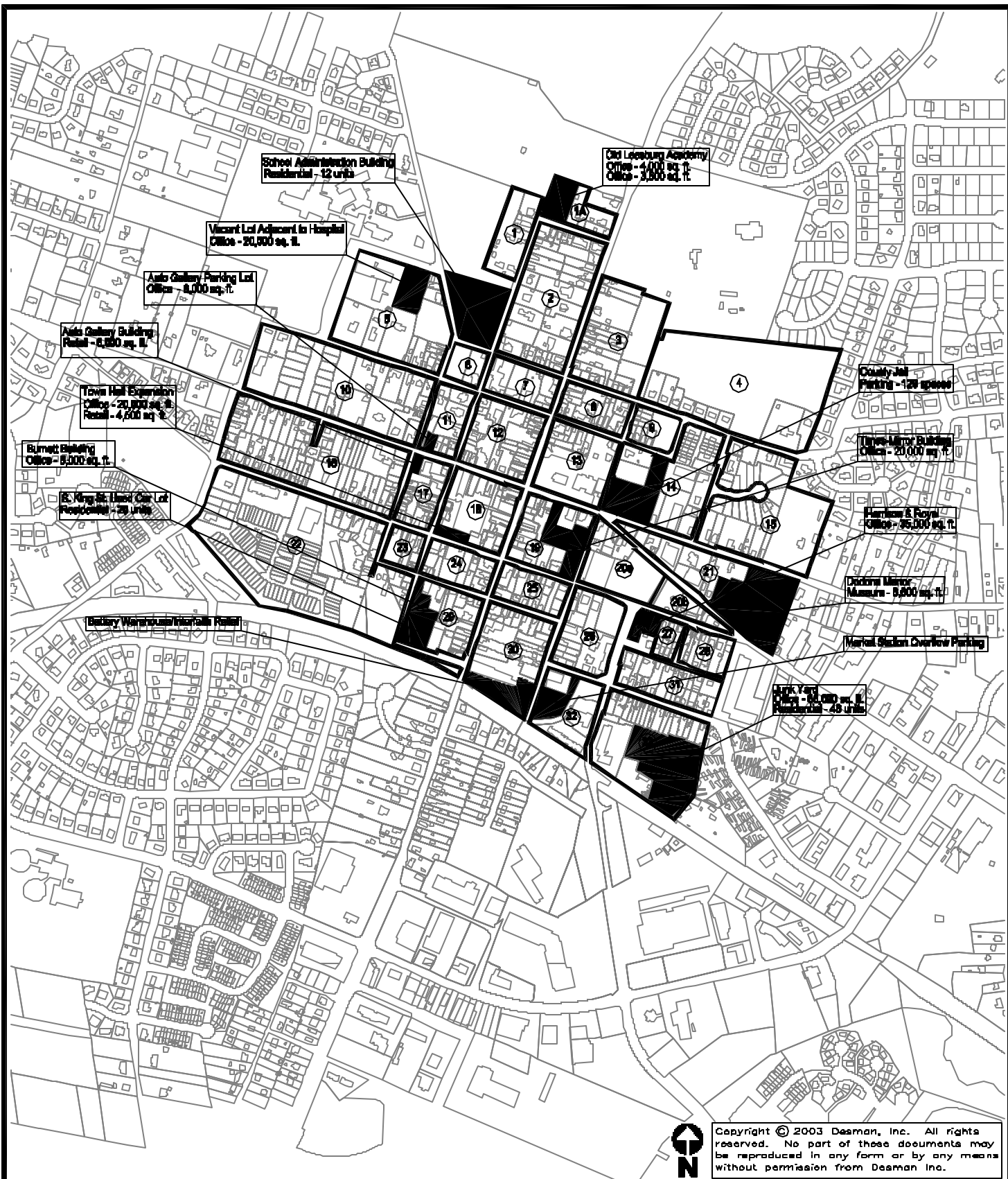
Assessment of Future Development

Known, Proposed and Potential Development

Development information was obtained from the Town of Leesburg on known, proposed, and potential projects within the study area. Short-term was identified as 0-5 years, mid-range was identified as 5-10 years, and long-term was identified as 10+ years for purposes of this study. Table 7a, 7b and 7c summarizes the information that was provided and Exhibit 5 illustrates the developments' location within the study area in the Town of Leesburg.

Table 7a

Known, Proposed and Potential Development Activity Under an Short-Term (0-5 Year) Analysis				
Development	Block	Land Use	Density	
Harrison & Royal	27	Office	35,000	sq. ft.
Dodona Manor	21	Museum	6,600	sq. ft.
Burnett Building	29	Office	5,700	sq. ft.
Town Hall Expansion	18	Office	20,000	sq. ft.
		Retail	4,500	sq. ft.
Auto Gallery Building	17	Retail	6,000	sq. ft.
Auto Gallery Parking Lot	11	Office	6,000	sq. ft.
Old Leesburg Academy	1A	Office	4,000	sq. ft.
	1A	Museum	3,600	sq. ft.



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Known, Proposed & Potential Development

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Exhibit No.

5

Table 7b

Known, Proposed and Potential Development Activity Under a Mid-Range (5-10 years) Analysis				
Development	Block	Land Use	Density	
Former County Jail Site Parking	14	Parking	---	---
Times Mirror Building	19	Office	20,000	sq. ft.
Vacant Lot Adjacent to Hospital	5	Office	20,000	sq. ft.
School Administration Building	1	Residential	15	units

Table 7c

Known, Proposed and Potential Development Activity Under a Long-Term (10+ years)				
Development	Block	Land Use	Density	
Junk Yard	33	Office	60,000	sq. ft.
	33	Residential	48	units
Market Station Overflow Parking	34	---	---	---
Battery Warehouse/Interfaith Relief	30	---	---	---
County Court Complex	14	Office	60,000	sq. ft.
S. King St. Used Car Lot	29	Residential	20	units

Estimate of Parking Need

In order to accurately model peak parking demand associated with known, proposed, and potential development projects, the concepts of parking demand factors and shared use adjustment need to be introduced. By applying demand factors to the density of various land uses, the peak weekday parking activity associated with those developments can be estimated.

Land Use Parking Demand Factors

Land use parking demand factors or ratios are per-unit measures of peak hour parking generation. These land use parking demand factors are unique to each land use component. An example would be, for each occupied 1,000 sq. ft. of office space 3.0 parked vehicles during the typical peak activity period would be needed. The general peak period at an office building occurs between the hours of 10:00 AM and 2:00 PM. Table 8 illustrates the weekday peak parking demand factors that are believed to be relevant and accurate in the Town of Leesburg. Note that these factors are based on research conducted by the Urban Land Institute, the Institute of Transportation Engineers, and most importantly DESMAN's experience.

Table 8

Representative Peak Parking Demand Factors		
Land Use	Parking Space Units	Spaces per Weekday
Office	Per 1,000 SF GLA	3
Retail	Per 1,000 SF GLA	3.5
Residential	Per Dwelling Unit (1)	1.5
Museum	Per 1,000 SF GLA	1
NOTES: (1) Assumes one and one-half vehicles owned per dwelling unit. GLA = Gross Leasable Area Source: Urban Land Institute, Institute of Transportation Engineers, DESMAN Experience		

The parking needs associated with different activities (office, retail, etc.) fluctuate differently throughout a day and different activities generate different types of parkers with different expectations (hour of use, duration of stay, parking rate, etc.) Therefore, a study of parking accumulation patterns is required.

Parking Accumulation Patterns

The daylong activity patterns and peak activity periods associated with various land uses are quite different. For example, the arrival and departure patterns of vehicles generated by an office building are greatest at about 10:00 AM when most employees are at work and visitors typically begin arriving. Conversely, the arrival and departure patterns generated by residential activity relate to when residents are normally home. Parking generation for a resident is greatest during the hours between 10:00 PM and 7:00 AM. Therefore, hourly accumulation percentages (Table 9) will need to be used to adjust for parking demand in the different developments to be seen in the Town of Leesburg.

Table 9

Representative Hourly Accumulation by Percent of Peak Hour (Weekday)				
Hour of Day	Office	Retail	Residential	Museum
6:00 AM	3%	0%	100%	0%
7:00 AM	20%	8%	87%	8%
8:00 AM	63%	18%	79%	18%
9:00 AM	93%	42%	73%	41%
10:00 AM	100%	68%	68%	68%
11:00 AM	100%	87%	59%	87%
12:00 Noon	90%	97%	60%	97%
1:00 PM	90%	100%	59%	100%
2:00 PM	97%	97%	60%	97%
3:00 PM	93%	95%	61%	95%
4:00 PM	77%	87%	66%	87%
5:00 PM	47%	79%	77%	89%
6:00 PM	23%	82%	85%	87%
7:00 PM	7%	89%	94%	61%
8:00 PM	7%	87%	96%	32%
9:00 PM	3%	61%	98%	13%
10:00 PM	3%	32%	99%	0%
11:00 PM	0%	13%	100%	0%
12:00 Midnight	0%	0%	100%	0%

Development Based Weekday Demand Estimates

To determine the future demand for parking associated with new development, the factors and adjustments just presented are applied to the development information. Table 10a, 10b and 10c illustrate the parking demand, potential displacement, and resulting parking surplus/deficit associated with each development and under each future conditions. For example, the development of 35,000 sq. ft. of office space in the Harrison & Royal development (block 27) will displace 16 spaces and provide 65 spaces. During the peak weekday (1:00 PM) period, adjusting for office parking needed at 1:00 PM (100%), and applying the demand factor of 3, the project will create a daytime demand of 105 parking spaces. As a result, a peak weekday deficit of 56 spaces would be created by this new development (Demand (105) + parking to be provided (65) – parking to be displaced (16)).

Table 10a

Known, Proposed and Potential Development Activity Under an Short-Term (0-5 Year) Analysis										
Development	Block	Land Use	Density	Peak Weeday Demand Factor	Peak Hour Adjustment	Demand	Parking to be Provided	Parking to be Displaced	Resulting Parking Surplus/Deficit	
Harrison & Royal	27	Office	35,000 sq. ft.	3	100%	105	65	16	-56	
Dodona Manor	21	Museum	6,600 sq. ft.	1	100%	7	30	0	23	
Burnett Building	29	Office	5,700 sq. ft.	3	100%	17	23	18	-12	
Town Hall Expansion	18	Office	20,000 sq. ft.	3	100%	60	0	0	-74	
		Retail	4,500 sq. ft.	3.5	87%	14				
Auto Gallery Building	17	Retail	6,000 sq. ft.	3.5	87%	18	0	0	-18	
Auto Gallery Parking Lot	11	Office	6,000 sq. ft.	3	100%	18	12	40	-46	
Old Leesburg Academy	1A	Office	4,000 sq. ft.	3	87%	10	0	0	-14	
		Museum	3,600 sq. ft.	1	100%	4				

Table 10b

Known, Proposed and Potential Development Activity Under a Mid-Range (5-10 years) Analysis										
Development	Block	Land Use	Density	Peak Weeday Demand Factor	Peak Hour Adjustment	Demand	Parking to be Provided	Parking to be Displaced	Resulting Parking Surplus/Deficit	
Former County Jail Site Parking	14	Parking	---	---	---	0	129	0	129	
Times-Mirror Building	19	Office	20,000 sq. ft.	3	100%	60	120	106	-46	
Vacant Lot Adjacent to Hospital	5	Office	20,000 sq. ft.	3	100%	60	115	0	55	
School Administration Building	1	Residential	15 units	1.5	87%	20	0	0	-20	

Table 10c

Known, Proposed and Potential Development Activity Under a Long-Term (10+ years) Analysis										
Development	Block	Land Use	Density	Peak Weeday Demand Factor	Peak Hour Adjustment	Demand	Parking to be Provided	Parking to be Displaced	Resulting Parking Surplus/Deficit	
Junk Yard	33	Office	60,000 sq. ft.	3	100%	180	296	0	116	
	33	Residential	48 units	1.5	87%	63				
County Court Complex	14	Office	60,000 sq. ft.	3	100%	180	222	129	-87	
S. King St. Used Car Lot	29	Residential	20 units	1.5	87%	26	25	52	-53	

Future Parking Surplus/Deficit Conditions

To determine future parking surplus/deficit conditions for each city block within the study area, the development-generated deficits are layered into the existing parking supply and utilization conditions. Tables 11a, 11b and 11c and Exhibits 6, 7 and 8 present the layering of development impacts onto the current public parking surplus/deficit figures by block (accounting for the public system's practical capacity of 90%). It should be noted all blocks are illustrated on the tables but the blocks that are affected by development are noted in **bold**.

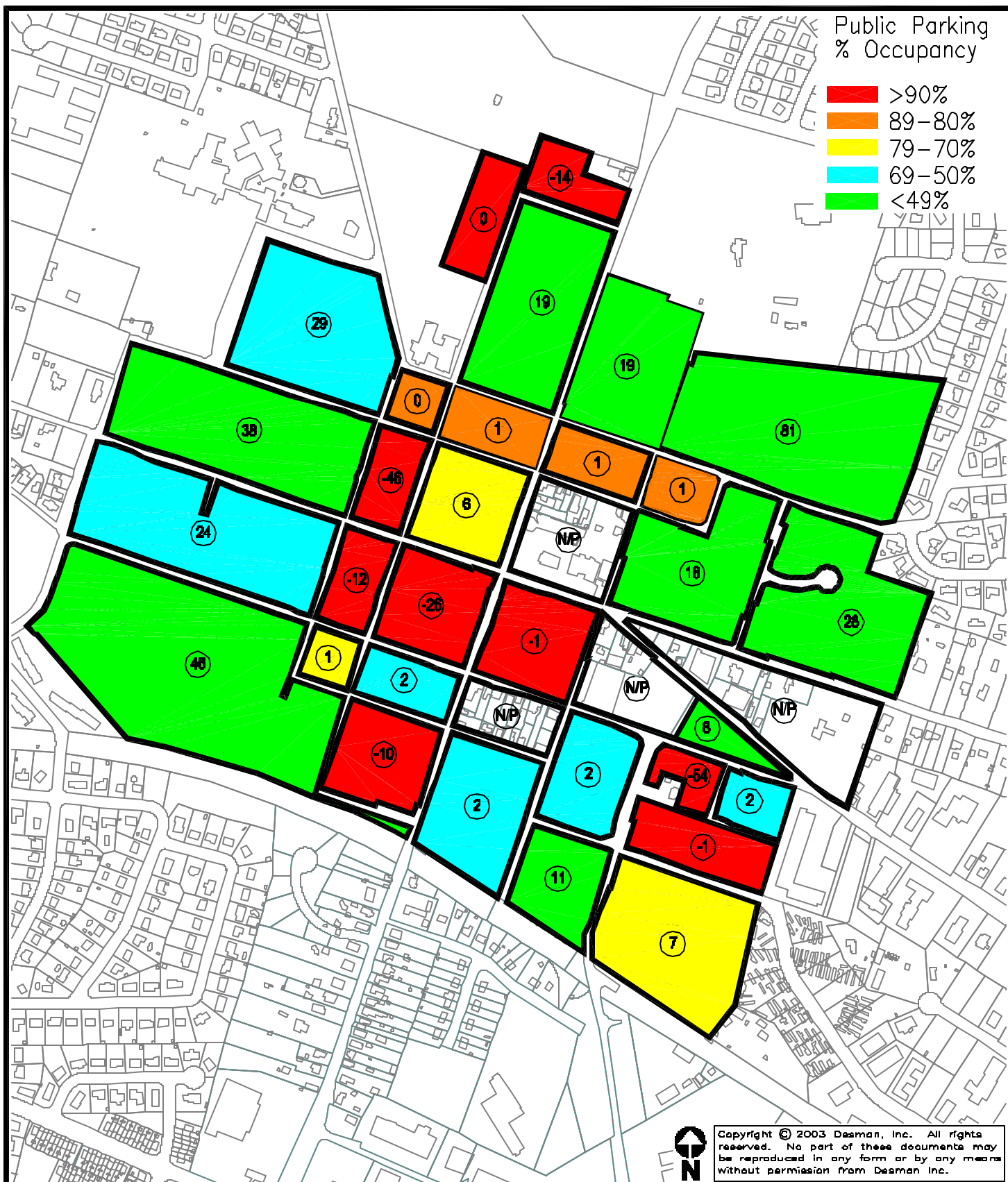
Short-Term Development Scenario (0-5 years)

Table 11a shows that there will be a surplus of 217 spaces after development under the short-term scenario. In all but one block where development will take place deficit conditions will occur. The Town Hall Expansion will generate a demand for 74 spaces but will not provide additional

parking for the development. In the Harrison & Royal development, there will be a demand for 105 spaces and 16 spaces being displaced but 65 spaces being provided. Even with spaces being provided in this development there will be a resulting deficit of 56 spaces. The Dodona Manor development is the only development that will provide sufficient parking for the demand that specific land use will generate.

Table 11a

Block	Short-Term Development Scenario Block Surplus/Deficit (By Block)					
	Current Public Supply	Current Operational Capacity	Current Peak Utilization	Current Surplus/Deficit	Immediate Development Surplus/Deficit	Future Surplus/Deficit Conditions
1	0	0	0	0	---	0
1A	0	0	0	0	-14	-14
2	28	25	6	19	---	19
3	35	32	13	19	---	19
4	136	122	41	81	---	81
5	63	57	18	39	---	39
6	8	7	7	0	---	0
7	18	16	15	1	---	1
8	16	14	13	1	---	1
9	11	10	9	1	---	1
10	58	52	14	38	---	38
11	0	0	0	0	-46	-46
12	43	39	33	6	---	6
13	0	0	0	0	---	0
14	39	35	17	18	---	18
15	50	45	17	28	---	28
16	61	55	31	24	---	24
17	20	18	12	6	-18	-12
18	324	292	244	48	-74	-26
19	17	15	16	-1	---	-1
20	0	0	0	0	---	0
21	13	12	4	8	23	31
22	0	0	0	0	---	0
23	108	97	51	46	---	46
24	9	8	7	1	---	1
25	5	5	3	2	---	2
26	0	0	0	0	---	0
27	8	7	5	2	-56	-54
28	7	6	4	2	---	2
29	7	6	4	2	-12	-10
30	16	14	12	2	---	2
31	28	25	14	11	---	11
32	4	4	5	-1	---	-1
33	22	20	10	10	---	10
Total	1154	1039	625	414	-197	217



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0-5 Year Development Impact

TOWN OF LEESBURG, VIRGINIA

Exhibit No.

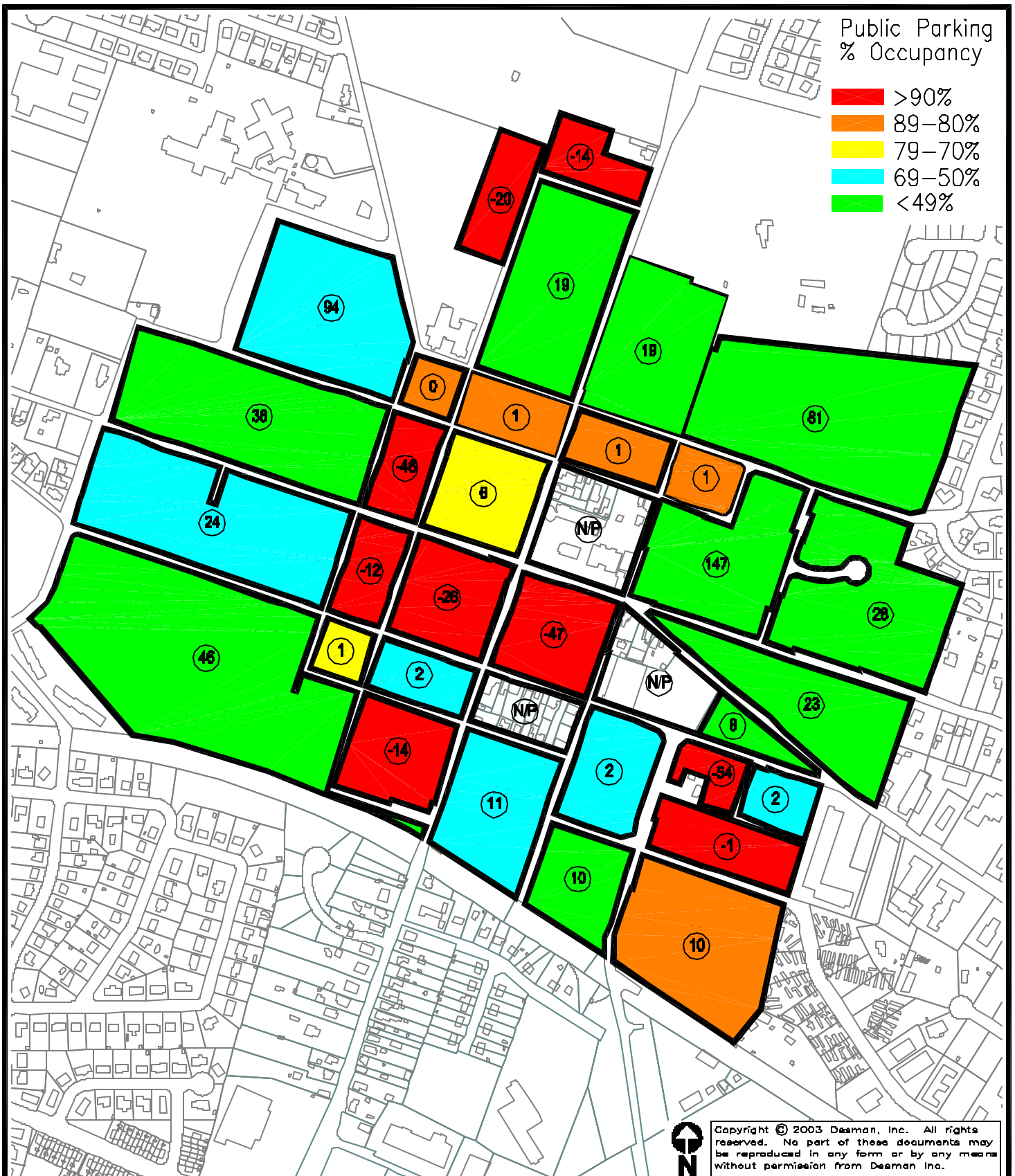
6

Mid-Term Development Scenario (5-10 years)

Table 11b shows that there will be a surplus of 341 spaces as the development impact under the mid-range scenario (5-10 years). Of the four blocks in which development will be occurring, two blocks will show a parking deficit and two will show a large parking surplus due to a large number of spaces that are planned to be provided (364 spaces).

Table 11b

Block	Mid-Term Development Scenario Block Surplus/Deficit (By Block)					Future Surplus/Deficit Conditions
	Current Public Supply	Current Operational Capacity	Current Peak Utilization	Current Surplus/Deficit	Mid-Range Development Surplus/Deficit	
1	0	0	0	0	-20	-20
1A	0	0	0	0	-14	-14
2	28	25	6	19	---	19
3	35	32	13	19	---	19
4	136	122	41	81	---	81
5	63	57	18	39	55	94
6	8	7	7	0	---	0
7	18	16	15	1	---	1
8	16	14	13	1	---	1
9	11	10	9	1	---	1
10	58	52	14	38	---	38
11	0	0	0	0	-46	-46
12	43	39	33	6	---	6
13	0	0	0	0	---	0
14	39	35	17	18	129	147
15	50	45	17	28	---	28
16	61	55	31	24	---	24
17	20	18	12	6	-18	-12
18	324	292	244	48	-74	-26
19	17	15	16	-1	-46	-47
20	0	0	0	0	---	8
21	13	12	4	8	23	23
22	0	0	0	0	---	46
23	108	97	51	46	---	1
24	9	8	7	1	---	2
25	5	5	3	2	---	0
26	0	0	0	0	---	2
27	8	7	5	2	-56	-54
28	7	6	4	2	---	2
29	7	6	4	2	-12	-14
30	16	14	12	2	---	11
31	28	25	14	11	---	-1
32	4	4	5	-1	---	10
33	22	20	10	10	---	10
Total	1,154	1,039	625	414	-78	341



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3-5 Year Development Impact

TOWN OF LEESBURG, VIRGINIA

Exhibit No.

7

Long-Term Development Scenario (10+years)

Table 11c shows that there will be a surplus of 317 spaces as the development impact under the long-range scenario (10+ years) are realized. Of the two blocks where development is anticipated, large parking space surpluses are projected as a large number of spaces are planned to be provided (518 spaces). Each of the developments are providing enough parking for the demand generated but the County Court Complex will displace 129 spaces that will be provided during the mid-range projects.

Table 11c

Block	Long-Term Development Scenario Block Surplus/Deficit (By Block)					Future Surplus/Deficit Conditions
	Current Public Supply	Current Operational Capacity	Current Peak Utilization	Current Surplus/Deficit	Mid-Range Development Surplus/Deficit	
1	0	0	0	0	-20	-20
1A	0	0	0	0	-14	-14
2	28	25	6	19	---	19
3	35	32	13	19	---	19
4	136	122	41	81	---	81
5	63	57	18	39	55	94
6	8	7	7	0	---	0
7	18	16	15	1	---	1
8	16	14	13	1	---	1
9	11	10	9	1	---	1
10	58	52	14	38	---	38
11	0	0	0	0	-46	-46
12	43	39	33	6	---	6
13	0	0	0	0	---	0
14	39	35	17	18	42	60
15	50	45	17	28	---	28
16	61	55	31	24	---	24
17	20	18	12	6	-18	-12
18	324	292	244	48	-74	-26
19	17	15	16	-1	-46	-47
20	0	0	0	0	---	8
21	13	12	4	8	23	23
22	0	0	0	0	---	46
23	108	97	51	46	---	1
24	9	8	7	1	---	2
25	5	5	3	2	---	0
26	0	0	0	0	---	2
27	8	7	5	2	-56	-54
28	7	6	4	2	---	2
29	7	6	4	2	-65	-67
30	16	14	12	2	---	11
31	28	25	14	11	---	-1
32	4	4	5	-1	---	10
33	22	20	10	10	116	126
Total	1,154	1,039	625	414	-102	317

Section 3 – Parking Operations & Management

Parking Administration

The Town of Leesburg currently operates its parking system using a fragmented management approach. This method requires a number of Town departments to be responsible for the daily maintenance and operation of parking in the Town of Leesburg.

For example, the Finance Department is responsible for the repair and collection of parking meters and assignment of attendant cashiers, the Public Works Department is responsible for the maintenance of parking lots and parking structures and the Police Department is responsible for the enforcement of parking regulations and citation issuance. Each Town department operates its own responsibility center without much interaction with the other components that make up a comprehensive parking system.

Recommendations

Organization and management of parking systems varies from city to city. Specific responsibilities and arrangements reflect local circumstances and needs. Major variables include the amount and location of the municipality-owned parking facilities, community size and resources, state enabling legislation, local statutes and the priorities, agenda and attitudes of the local community.

Municipal parking systems are typically comprised of on-street parking facilities (i.e. curbside parking meters and time zones) and off-street parking facilities (i.e. parking garages and surface parking lots). Because daily operations, maintenance, personnel and costs associated with the management of on and off-street parking facilities are quite different, the parking management structures municipalities have created are typically a reflection of their individual preferences.

Generally, organizational examples for managing municipal parking activities can be viewed as a “spectrum of alternatives.” On one end of the spectrum is the purely public sector or in-house structure for complete management of a municipality’s parking facilities. Typically, small cities having small parking systems or, larger cities that have opted to make a substantial commitment to properly staff and fund an in-house parking program in one or more departments, elect not to involve the private sector.

On the other end of the spectrum are cities that assigned the total responsibility for managing their parking facilities to one or more private entities. The rationale for such an arrangement often relates to the desire for professional and competent management, administrative savings, improved responsiveness, financing and/or contracting latitude, or other basic operational efficiencies that stem from having an autonomous private entity assume control of public parking facilities.

In the middle of the spectrum are various organizational structures that have public and private aspects. To lessen some of the public sector burden of selected roles, responsibilities can be assigned to the private sector. Municipalities may engage private sector entities with individual contracts to provide such services as facility operation, maintenance, meter collections, auditing or development of public parking facilities, while delegating the balance of the responsibilities to one or more city departments or agencies. In today's environment, organizational structures for managing public parking activities in most cities include some private sector involvement and thus as a result, fall into the middle of the spectrum.

Parking industry management experts generally agree that the parking management structure most often dictates what the parking system will look like. Conversely, the parking system and its operation most often reveal the nature of the management structure. There are some telltale signs of a poorly crafted management structure.

These telltale signs are usually readily evident and generally characterized by the parking system's inability to:

- Meet basic performance objectives
- Portray a good public image
- Respond to the user groups it serves
- Understand and apply large parking management strategies

Conversely, well crafted parking management structures most often have the ability to perform the following:

- Establish an adequate budget to address the operating requirements of the parking system
- Set rates that are sufficient to fund activity to meet the adopted goals and objectives of the parking system
- Manipulate and control the elements and processes associated with the management and operation of the parking system
- Set aside sufficient revenue for property acquisition and future development
- Set aside sufficient revenue for system maintenance and other future capital expenditures
- Direct and deliver services from a single source responsibility center

The most effective method of managing any municipal parking operation is through a sole source responsibility center. A majority of municipalities nationwide take a consolidated approach to parking management through the use of a Parking Authority, Parking Department, or a Parking Division, which is most often found under the direction of the Public Works Department.

Based on the size of the overall parking system and the revenues generated by parking in the Town of Leesburg, the recommended approach to parking management would be the creation of a Parking Division. A parking manager would be hired and would be responsible for all aspects of parking operations, including enforcement, maintenance, revenue collection, permitting, and planning. The parking manager would supervise one full-time and one part-time parking enforcement officer, and one maintenance and collection technician. It should be noted that the maintenance and revenue collection functions are already staffed, although not necessarily by DPW staff. Therefore, the proposed parking division's operating budget (to be discussed) assumes some cost efficiency associated with existing personnel and functions.

This approach would empower centralize responsibility for all functions of parking management. This would include parking administration (policy setting), parking enforcement management and oversight, parking meter management and short and long-term maintenance responsibilities. In addition to these operational standards, it would be preferable for the newly reorganized parking operation to be financially self-sufficient and not rely on general fund monies for its daily operation or capital expenses. Most cities refer to this type of parking department as an "Enterprise Fund" department.

A parking enterprise fund *is* a direct unit of city government. It is an accounting construct of city government that follows a businesslike model and is intended to generate adequate income to be self-sustaining. This model generally does not have a board of directors and relinquishes two extremely important powers that are embodied into parking authorities.

These include:

- The power to approve its own budget.
- The power to set its own fees and parking rates.

The “enterprise” fund approach to parking management most often offers a municipality the best mix of operational advantages. These include:

- Municipality maintains direct control of parking operations and long-term parking planning goals.
- Financial structure (self-supporting) permits department to sometime work outside of financial restraints placed on other “general fund” city departments.
- Parking operations and development usually do not place a tax burden on the citizens of its municipality.

Overall, there are no operational disadvantages to this approach other than the parking “enterprise fund” does not maintain the operational freedom of a parking authority and parking issues can sometimes become political at higher level of government. It should be noted that the financial analysis of the Town of Leesburg’s parking system, at this point of the study, has not been presented. Therefore, it may be presumptuous to assume that the recommended parking division can be established as an enterprise fund, i.e., parking revenues can cover the cost of operations, maintenance, and the debt service on existing/proposed parking facilities.

Parking Enforcement

As there is not a person or persons whose sole responsibility it is to enforce parking regulations in the Town, parking enforcement efforts may sometime take a back seat to other more important police activities. This is evidenced by the fact that on average each police officer issues only two (2) parking citations per day. In addition, parking meter revenue for Fiscal Year 2002 was

reported at \$34,618 with Fiscal Year 2003 projected to be \$30,000. Common indicators of less than sufficient parking enforcement efforts include a drop in annual parking meter revenues.

Presently, parking citations are not automated. All parking citations are currently handwritten and require manual input into the collection database. This can be labor intensive as it requires personnel to manually input and track citation issuance and resulting payments.

At this time, the Town of Leesburg does not maintain a booting or towing program for scofflaws.

Recommendations

Parking enforcement is the foundation of any municipal parking program. Parking industry staffing guidelines dictate 1 parking violations officer per 200-300 parking meters. Timed zones without parking meters require additional personnel. Without the enforcement of posted parking regulations, the use of on-street parking by other than short-term users will occur and result in a lack of available on-street parking and off-street facilities being underutilized. Without consistent and proper parking enforcement efforts, the public perception of readily available curbside parking will also be diminished.

For any of the operational recommendations found in this report to be effective, it is essential that parking enforcement efforts in the study area be completed in such a manner to exhibit to the public that failing to follow the posted parking regulations will result in a parking citation.

It is recommended that the Town of Leesburg transfer all parking citation management responsibilities to the newly formed parking division. This will allow for dedicated personnel to enforce parking regulations. This consolidation of efforts will also allow the parking division to track parking citations from date of issuance to date of payment and take the necessary action required to track down citation holders who refuse to pay.

There are several avenues the Town of Leesburg can take to pursue citation holders who refuse to pay their outstanding fines. Most states allow for the restriction of vehicle registration renewal for owners with three or more outstanding fines or fines that equal a preset dollar amount. Basically, this approach will capture a good majority of those individuals who refuse to pay.

Another option available to the Town is the development of a towing and booting program for these same scofflaws who may be found parking within Town limits. Both programs can be further enhanced through the use of a collection agency who as a last resort will attach each respective scofflaw's credit report.

Another strategy that municipalities employ to discourage repeat parking offenders is the use of a graduated parking fine structure. If a parking enforcement officer identifies a vehicle that has not previously received a parking citation, that individual would receive a warning. No fine would be levied. If that vehicle is identified a second time, say within a 3 year period, that vehicle would receive a parking citation at the base rate (say \$15 for exceeded the posted time limit). A third violation would receive a \$30 fine. A fourth violation would require a \$60 fine. A fifth violation would require the booting of the vehicle. Such a system is only possible through the use of handheld ticket issuance technology.

The Town of Leesburg currently issues handwritten parking citations. The national trend is to move away from handwritten parking citations and exclusively use handheld ticket issuance technology to the fullest degree possible. The latest generations of these devices are small lightweight (PDA style) machines that each enforcement officer carries on their person that allows for automated ticket writing.

Information on each vehicle issued a citation is entered into the handheld device resulting in a ticket being dispensed automatically. At the end of each patrol shift, each officer downloads their device into a personal computer. This information is then assigned the correct owners' names based on the license plate numbers recorded with late notices being generated by the system on predetermined dates from the initial date of issuance.

Handheld ticket issuing devices also provide the Town with information regarding the performance of its parking enforcement staff. It is capable of tracking the number of citations written during any specified period and can identify areas where parking enforcement efforts may need to be stepped up based on issuance levels.

Whether parking citation are issued by a parking enforcement officer who patrols the Historic District or by sworn police officers who are patrolling larger areas of the Town, all parking citations would be processed by the parking division.

It should be pointed out that parking enforcement personnel are not solely responsible for the issuance of parking citation. As Town employees and representatives of Town government and the downtown business district, parking enforcement personnel would also act as parking concierges to the public, providing direction to convenient parking locations, information on parking policy, and guidance of dining and shopping destinations. They also act as the eyes and ears for the Town's Public Works Department, noting locations of cracked sidewalks, deteriorated or missing signage, landscaping/maintenance needs, and waste/trash removal.

Parking Meters

The Town of Leesburg operates and maintains 145 on-street parking meters and 11 off-street parking meters. Based on revenues reported for Fiscal Year 2002, each meter, on average, generates approximately \$222.00 annually. The formula used to reach this figure is:

$$\$34,618 \div 156 \text{ meters} = \$221.91$$

This number equates to approximately \$0.96 per meter per day. The formula used to reach this figure is:

$$\$221.87 \div 230 \text{ business days} = \$0.96 \text{ per day}$$

The parking meters in use throughout the study area are Duncan 60 series meters, which are mechanical style meters. Failure rates for older style meter are often higher than today's more modern electronic meters.

Parking meter coin collection duties are conducted through the Finance Department. Meters are collected every two weeks and there is no counting of revenues prior to coins being delivered to the bank for counting and crediting to the proper Town account.

Current Meter Technologies and their Pros & Cons

With the use of older mechanical style parking meters, as is the case in the Town of Leesburg, it is more expensive to maintain and repair mechanical type parking meters. It is also very difficult to account for the revenues generated by each meter since existing mechanical parking meters do not maintain electronic memory chip technology.

With increased parking rates throughout the nation, it has become increasingly inconvenient to carry the number of coins needed to meet parking meter fees. To offset this demand for increased coins, parking meter manufacturers had to offer a variety of options to overcome this requirement. These options include smart card, credit card, and token technology. Should the Town of Leesburg decide to replace existing mechanical parking meters with new parking meter technology, it is recommended that some or all of these payment options be offered to the public to increase levels of customer service.

When using mechanical parking meters in an enforcement environment, there is a poor correlation between parking income and time parked. Some consultants refer to the poor correlation as the 70/70 rule. Although not an absolute number, however generally correct in most municipal jurisdictions, approximately 30% of the time a parking metered space is occupied, the parking meter's time is expired. That means that only 70% of the income for time parked is received. The other side of the 70/70 rule is that approximately 30% of parking patrons are able to park on coins deposited by a previous parking patron. That means that they must only deposit coins for 70% of their actual parking time. This is highly unlike gated parking systems which theoretically collect the actual parking charge for the actual time parked.

There are two primary parking meter options that can replace existing parking meters – individual single space electronic parking meters or multi-space parking meters. All individual parking meters are subject to the 70/70 rule, whereas multi-space parking meters are not. Multi-space parking meters come in two varieties, *Pay-By-Space* and *Pay-And-Display*. Each electronic meter option will be discussed.

1. *Electronic Single Space Parking Meters* - The traditional approach would be to replace mechanical parking meters with state-of-the-art electronic parking meters. This can be accomplished by the purchase of entirely new parking meters for about \$350 each or by

replacement of the internal mechanism of existing meter housings for about \$150 each. However, with the diversity of existing parking meter brands, replacement of housings may not be a universal option. One such insert is pictured below.

An Electronic Parking Meter Insert



Electronic parking meters change the way meter repairs and maintenance is performed. They require periodic battery changes (annual in most cases); and instead of repairing mechanical parts, meter maintenance is performed by merely replacing the entire insert with a new insert from inventory. Many users of electronic parking meters enter into contracts whereby defective inserts are routinely picked up and exchanged for repaired ones. Unlike the existing mechanical parking meters, the electronic parking meter's internal clocks are highly accurate and are not likely to incorrectly display time.

2. *Central Parking Meters* - Recently, multi-space parking meters have become increasingly popular. They come in two varieties *Pay-By-Space* and *Pay-And-Display*. Multi-space parking meters have some distinct advantages. Primarily, they provide a full audit trail of all transactions. In some more sophisticated installations, multi-space parking meters can even send messages to a host computer that performs diagnostics of each device and displays its financial and supply status. Depending on the location of the parking spaces that are intended to be covered, multi-space parking meters can replace between 10 and 20 traditional single space parking meters, and accept cash, coins, tokens, smart card, or credit card for payment. They are also more aesthetically appealing.

- a. *Pay-By-Space* –In an on-street application, each *Pay-By-Space* parking meter services 10-20 numbered parking spaces. Therefore, each parking space requires a sign, either painted on the pavement or posted. To render payment, the parking patron must remember the number of the parking space in which they parked. Once the space number is entered, the next step is to determine the length of stay and deposit or insert cash, coins, tokens, a smart cards, or credit card for payment. Frankly, *Pay-By-Space* is not the best choice for on-street applications in Leesburg because marking spaces on the street when roads are snow covered obscures the markings and the garish look of signs with numbers posted in front of each parking space is unattractive. Enforcement is performed by receiving a printout from each *Pay-By-Space* parking meter and issuing a ticket to each vehicle that occupies an unpaid parking space.

A Solar Powered Central Parking Meter



- b. *Pay-And-Display* – Like its *Pay-By-Space* counterpart, *Pay-And-Display* parking meters can service between 10 - 20 parking spaces. The primary difference is that *Pay-And-Display* parking meters require fewer signs and not a sign in front of each parking space. The payment process requires the patron to select the duration of time and render payment by depositing or inserting cash, coins, tokens, a smart cards, or credit card. After a receipt is issued that boldly displays the expiration time and date, it is the patron's responsibility to display the receipt on the dashboard of the vehicle.

Recommendations

With respect to electronic parking meters, *Pay-By-Space* parking meters have had less success on-street in the United States. Parking patrons find them to be more difficult to use and

frustrating to remember the parking space number. Additionally, the garish look of numbered signs in front of each on-street parking space makes them an unattractive option. Despite the fact that *Pay-By-Space* parking meters accept multiple payment options, leave excellent audit trails, and are not subject to the 70/70 rule, it is recommended that this technology not be used because of negative user experiences reported.

Pay-And-Display parking meters have been a growing part of the on-street parking market that has gained and enjoyed user acceptance. Aspen, Colorado was one of the first municipal jurisdictions to abandon traditional on-street single space parking meters and replace them with *Pay-And-Display* parking meters. What started as an experiment nearly 8 years ago has turned into a successful national model for this payment option. Aspen started with a few test patches of *Pay-And-Display* central parking meters and expanded the program to the entire City.

In off-street applications it is recommended that canopies be installed with these devices to allow patrons to use the multi-space meters while remaining out of weather conditions. The payment area should also be well-lit with signage indicating the hours and rates associated with the use of each facility. The estimated cost of these units range from \$15,000 to \$25,000 per unit based on the options ordered for these units excluding installation or canopies.

After considering the parking meter options presented herein, it is recommended that at minimum, the existing mechanical parking meters should be replaced with electronic parking meters.

Traditional single space electronic parking meters are familiar to downtown parking patrons. There is no learning curve for the public and the electronic inserts require little retrofitting. However, with respect to parking income, the 70/70 rule continues to exist. There is technology in testing that could *zero out* the time and make individual electronic parking meters not subject to the 70/70 rule, but that technology has not yet proven itself. Just replacing mechanical parking meters on-street with single space electronic parking meters represents an improvement because of its audit capabilities. For that reason alone, these meters should be considered as an option. Nevertheless, it is recommended that the Town of Leesburg begin to audit its parking meters before coins are brought to the bank for deposit.

It may be important to note that DESMAN does not recommend or anticipate the need to expand on the on-street parking meter system. First and foremost, the Town's narrow streets prohibit the introduction of additional metered parking meters. Many of the streets have metered or unregulated parking on one side of the street and no parking on the other side of the street simply to permit the flow of traffic. Second, the demand for parking in the Town even during the peak daytime period does not warrant the need for additional on-street parking. As noted through this report, the parking system needs to encourage long-term parkers to use underutilized public lots on the periphery of the downtown. However, an effective and responsive parking manager could evaluate the need to introduce such meters in specific areas where the demand for high-turnover spaces exist.

Off-Street Parking

The Town of Leesburg operates and manages one structured parking garage and one surface parking lot. Additionally, Loudoun County provides a significant number of public/free spaces in their Pennington Street lot. Including the Pennington lot, the off-street parking public inventory totals 496 spaces.

Parking at these facilities is assigned in the following manner:

Town Parking Garage: 97 permit spaces/290 public spaces

1st 2 hours free

\$.50 per hour thereafter with a \$4.00 daily maximum

\$50 Monthly Permit (8 or more group permits @ \$35 per space per month)

Free Saturday, Sunday, Holidays and Shoppers with Validation

(Year 2002 revenues for this parking facility equaled \$114,723)

Liberty Lot: 34 County permit spaces, 82 public/free spaces and 11 metered spaces

8:00AM until 5:00 PM Monday through Friday all other time public/free

\$.35/3 hours 9:00 AM until 6:00 PM

It should be noted that the Town has an agreement with the County regarding the “leasing” of 50 spaces in that lot for County employees/vehicles. Surveys noted only 34 spaces actually “signed” for County use.

Pennington Lot: 97 county permit spaces, 113 public/free spaces

8:00 AM until 5:00 PM Monday through Friday, all other times public/free

Recommendations

It is recommended that the off-street hourly rate remain at \$0.50 per hour for short-term parking but longer-term parking be increased to \$1.00 per hour with a \$5.00 maximum rate versus the current \$4.00 rate.

The following rate structure is recommended:

0-1 hour - \$0.50
1-2 hours - \$1.00
3-4 hours - \$1.50
4-5 hours - \$2.00
5-6 hours - \$3.00
6-7 hours - \$4.00
Over 7 hours - \$5.00

Rates/Time Limits/Hours of Operation

Based on an initial review of the Town Ordinance (91-0-58) it appears that parking rates in the Town of Leesburg have not been increased since 1992. At present, rates for on-street parking meters are \$0.25 per hour with the majority of meters designed for two-hour parking with some meters priced at \$0.35 for three (3) hour parking. A small number of on-street meters near the Courthouse are priced at \$0.50/hour. Off-street parking rates are \$0.50 per hour with a \$4.00 maximum daily rate with the first two hours of each visit in the Town Hall garage free of charge.

Parking meters are operational and enforced on-street during the hours of 9:00 AM until 6:00 PM. Off-street facilities are operated from 11:00 AM until 8:00 PM.

The Town Code (Section 10/176) also addresses parking meter rates. Under the Town Code, meter rates vary from \$0.25 for 75 minutes to \$0.30 for 90 minutes to \$0.35 or \$0.50 for 60 minutes, depending on the location.

Upon further evaluation of the 1992 Ordinance (91-0-58), it was states that “whereas the current hourly rate for on-street metered parking is \$0.35/hour...the rates for street parking and the parking facility (\$0.50/hour) should be equivalent.” In actuality, only a small number of on-street meters are now priced at \$0.35/hour. The vast majority are priced between \$0.25/hour and \$0.35/3 hours. It does not appear that the rate guidelines set forth in that 1992 Ordinance were enacted. It also appears that the Town Code does not accurately reflect the rates or inventory (types of duration) that are currently in effect.

Recommendations

It is recommended that parking meter rates be increased to \$0.50 per hour. It is also recommended that the hours of operation and enforcement of on-street meters be adjusted to match the operating hours of the off-street parking facilities. Within the next three years the Town and its parking manager should evaluate the need to increase on-street meter rates to \$0.75 per hour to ensure turnover and availability of on-street meters for short term parking and to further discourage long-term parkers.

In addition to the change in meter rates and operational hours, it is recommended that the rate structure for off-street facilities be adjusted to eliminate the first two hours of parking being free of charge. Instead, a “Merchant Validation” program should be used to provide free parking for shoppers and restaurant goers. Under this scenario, the Town would collaborate with the local vendors and merchants to develop a “Merchant Validation” program that provides up to two hours of free parking. Program specifics could include a preset purchase amount to get two hours of free parking or simply require a validation stamp or token be given to the patron.

With the implementation of debit card and token technology at all metered locations, debit cards or tokens, in a denomination predetermined by the participating merchant, can be issued to the patron to buy down the cost of parking during their next visit to downtown. Each merchant or restaurant owner can decide on their own program parameters such as a purchase amount required for eligibility. This will provide an enticement to the patron to return to the downtown area and help lessen the impact of parking rate increases.

It is also recommended that the monthly permit rate in the Town Hall Garage be increased accordingly from \$50 per month to \$60 per month.

Finally, it is recommended that the on-street meter system, both physically and in the Town's Code and Ordinances, be unified. A system-wide duration of 2-hours is recommended for a variety of reasons including ease of enforcement, ease of use by short-term parking (turnover), and simplicity of informational signage.

Rate Increase Justification

These rate increases and hours of operation changes are based simply on the need to "recalibrate" the relationship between on-street and off-street parking rates and improves the distribution of long-term parking activity to more peripheral locations. These rate increases are not based on a desire to justify the expense associated with the operational and staffing (parking department) recommendations presented earlier. At \$0.25 per hour, and with the current low level of parking enforcement, area employees (long-term parkers) are tempted to park all day at a metered curbside space. If the employee chooses to feed the meter, the cost is only \$2.00 for 8 hours of parking. This represents a significant saving in comparison to all day parking in the Town Hall Garage (\$4.00). In comparison to current monthly rates in the Town Hall Garage (\$50), the \$2.00 per day also represents a considerable savings (\$2 per day times 20 business days per month equals \$40). Given the low level of enforcement (2 tickets issued per day on average), chances are the person might not receive a ticket even if they don't feed the meter (free parking).

The second justification for rate increases involves the desire to improve the distribution of parking demand. At present, long-term parkers have a variety of choices, including on-street meters (though in violation of the 2 or 3 hour limit), employer provided parking, and the Town Hall Garage. The Town and the County have a number of parking facilities on the fringe of the

downtown commercial district that are free of charge. These include the Liberty Street Lot and the Pennington Lot. Parking rate increases, balanced with consistent enforcement, could encourage long-term parkers to use these more peripheral, though still convenient, parking locations.

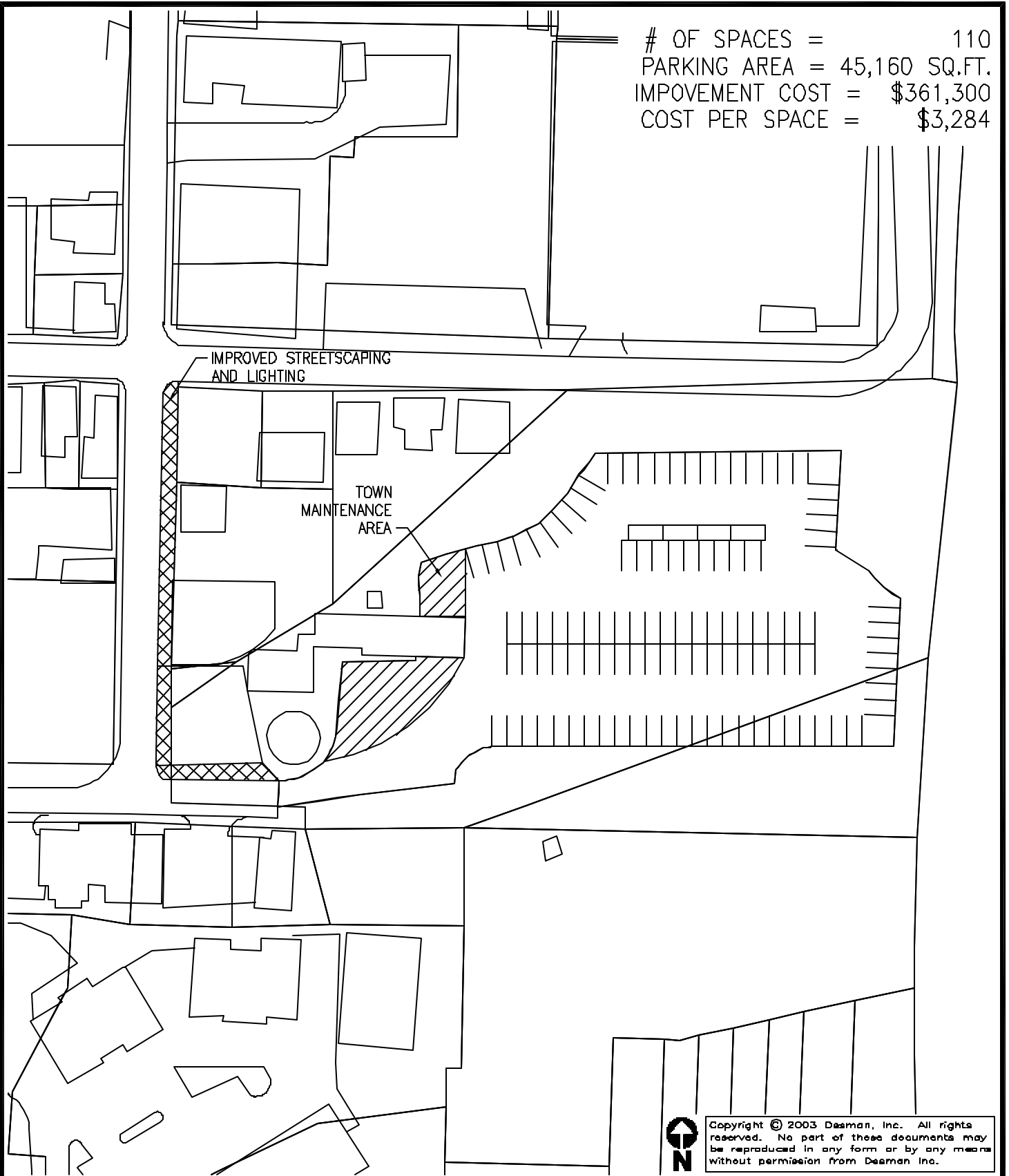
Section 4 – Parking Expansion and Improvement Opportunities

Though this consultant does not anticipate the need to build additional public parking in the near term, particularly an expensive parking structure, the opportunity to improve and/or expand the capacity and function of two key existing public lots needs to be evaluated nonetheless. The Town owned Liberty Street Lot and the County owned Pennington Lot represent valuable but under utilized public parking resources. Under the recommendation to encourage long-term on-street parkers to relocate to slightly more peripheral public off-street lots, the demand and utilization of the Liberty Street Lot and Pennington Lot could naturally increase. For example, the Town issues Town employees 81 access cards to the Town Hall Garage. Additionally, as many as 15 Town vehicles park in this facility. The employees and vehicles could be encourage to park in the Liberty Street lot, thereby freeing up space for short-term parkers and those long-term parkers willing to pay market rates (say \$60 per month). The following presents parking improvement and expansion concept plans that identify the layout, circulation, space capacity, and construction cost for each for these lots.

Liberty Lot Improvement Program

This Town owned parking lot currently has 34 County permit spaces, 82 public/free spaces and 11 metered spaces (currently non-functioning). This lot is under utilized and is in very poor condition. The asphalt surface is cracking and crumbling, weeds are growing throughout the lot, the pavement marking are faded, vehicular ingress and egress is poor and relatively undefined, and facilities for pedestrian access are almost non-existent. Though the lot cannot be expanded, significant improvements are necessary to make this facility more acceptable to both employees and short-term parkers. The concept illustrated on Exhibit 9 present a parking layout that significantly improves stall dimensions and vehicular circulation within the lot. Note that the vehicular exit on the southeastern end of the lot, to South Street, has been eliminated given the site's topography and the poor access that was provided. Unfortunately, the improved concepts results in a loss of 17 spaces as only 110 could be provided. Regardless, the layout is a vast improvement over the lot's current function and some area within the lot for the Town's maintenance shop activities is reserved. The cost to re-grade, re-surface, and re-stripe the lot is estimated at \$361,300, or approximately \$3,300 per space.

OF SPACES = 110
 PARKING AREA = 45,160 SQ.FT.
 IMPROVEMENT COST = \$361,300
 COST PER SPACE = \$3,284



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DESMAN
 ASSOCIATES

LIBERTY LOT

Exhibit No.

9

TOWN OF LEESBURG, VIRGINIA

A DIVISION OF DESMAN, INC.
 NEW YORK CHICAGO WASHINGTON, D.C. LAS VEGAS BOSTON CLEVELAND HARTFORD

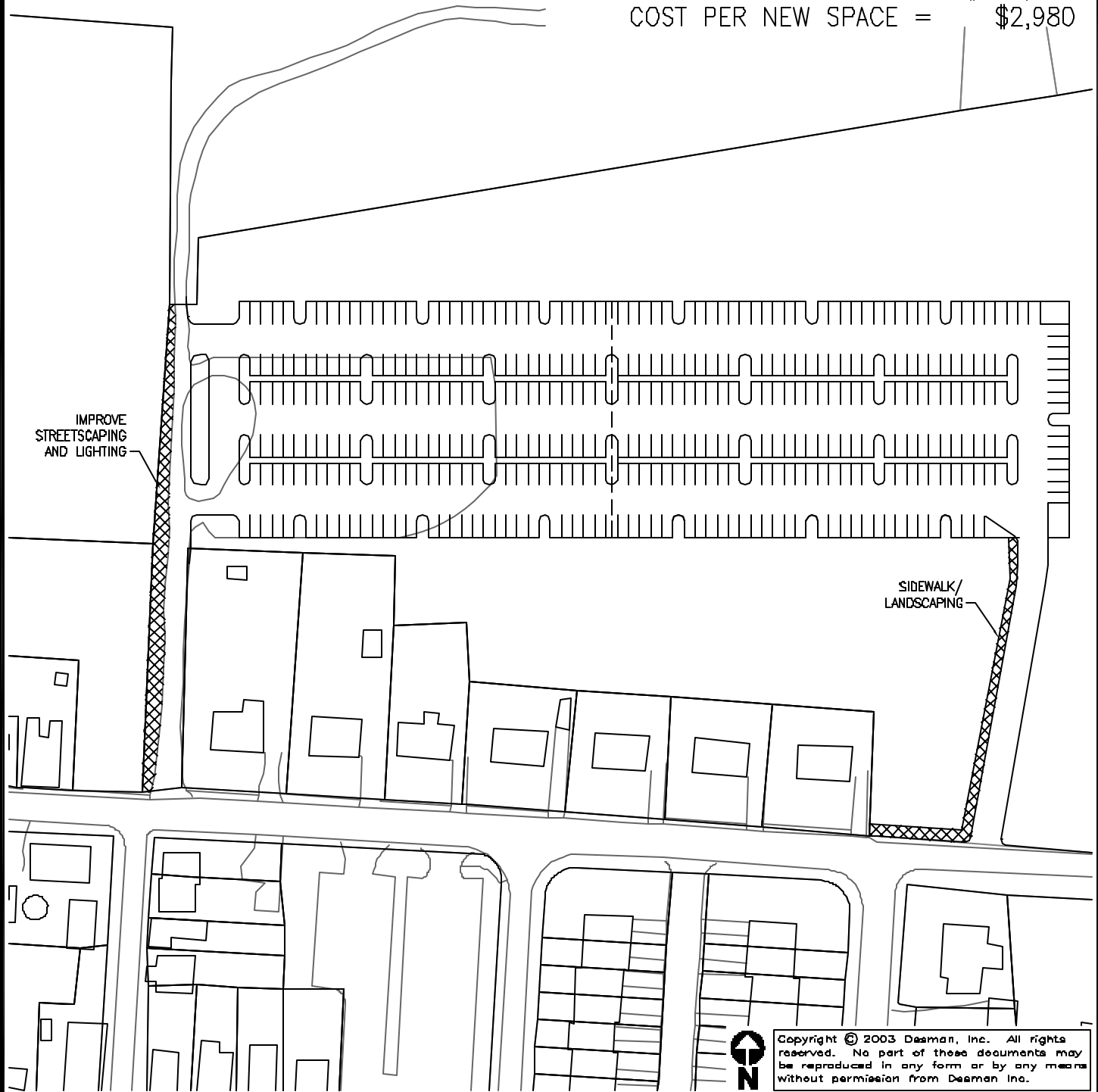
It is suggested that the 11 meters in this lot be removed. Any and all individuals wishing to park in this lot could obtain (Town employee) or purchase (private sector employer or employee) a parking permit (hangtag) to park in that lot during weekday daytime hours. After 6 PM the lot could be available to anyone free of charge. If the Pennington Lot is expanded (to be discussed), it would be presumed that the 34 spaces in the Liberty Lot that are assigned to County permit holders would be relocated to the Pennington Lot.

Pennington Lot Expansion

At present, the County owned Pennington Lot has 97 County permit only spaces and 113 publicly available spaces (210 total). Exhibit 10 illustrates a concept plan that expands the lot eastward into County owned property with a second vehicular and pedestrian (sidewalk) access point off North Street. The total capacity of the lot would increase to 393 spaces, or an additional 183 spaces. Including the new access road and sidewalk, the construction cost for this lot expansion is estimated at \$544,300, or approximately \$2,980 per space gained. As referenced earlier, this presently under utilized lot could absorb County employees, employees of other offices and shops in the area, and some short-term parkers who choose not to park (and pay) at on-street meters or in the Town Hall garage. Operationally, employee parking, either County or private sector, would be required to obtain a parking permit from the Town's parking manager free of charge or for a nominal monthly fee. Spaces within the lot would be available to parkers, including short-term parkers, on a "first come first serve basis".

If the Town wished to expand the County's lot for public parking, whether that public be destined for County business, Town business, or shopping/dinning, considerable and carefully worded agreements regarding the operation, maintenance, and management of that facility between the County (land owned) and the Town (the operator) would be required. The recommendations contained in this report, and the financial evaluation that is to follow, is based on the assumption that the Town will fund the expansion project and will provide all the necessary lighting, maintenance, enforcement, security, and management. Obviously, the County would benefit greatly from an expanded Pennington Lot. Therefore, it would be hoped that the County would contribute significant funds to support construction.

EXISTING # OF SPACES = 210
 ADDITIONAL SPACES = 183
 ADDITIONAL PARKING AREA = 61,436 SQ.FT.
 STREET/SIDEWALK AREA = 6,600 SQ.FT.
 TOTAL ADDITIONAL AREA = 68,036 SQ.FT.
 CONSTRUCTION COST = \$544,300
 COST PER NEW SPACE = \$2,980



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DESMAN
 ASSOCIATES

A DIVISION OF DESMAN, INC.
 NEW YORK CHICAGO WASHINGTON, D.C. LAS VEGAS BOSTON CLEVELAND HARTFORD

PENNINGTON LOT

TOWN OF LEESBURG, VIRGINIA

Exhibit No.

10

Section 5 - Fiscal Impact of Recommendations

It has been recommended that the newly created Parking Division should operate under an enterprise fund model where costs and expenses are covered by operating revenues (excluding parking fines). To evaluate if this definition is feasible, the following analysis combines the various costs associated with the Town's current parking operation, including the debt service payment on the Town Hall Garage, and compares those costs to estimated parking revenues under the assumption that the rate increase recommendations are implemented. Note that significant cost and revenue estimates are included in this analysis and, as such, it should not be considered the absolute capital and operating budget for this new division. The analysis simply is an attempt to illustrate the parking system's fiscal strengths or weaknesses.

Current Maintenance Costs

Based on FY 2001 estimated figures that were provided by the Town's Finance Department, the cost to operate and maintain the Town's meter and lot parking system equaled \$115,265. This figure includes the salaries and fringe benefits of staff, contractual services, material and supplies, and capital outlay. These costs do not include the expense associated with enforcement, parking citation fee collection, or adjudications. Nor do these cost include the administrative costs associated with parking planning, the development of parking policy, management/operations during special events, or the hours dedicated to responding to specific/immediate parking issues that are presented by the business community or the general public. Finally, these costs do not include debt service payment costs on construction.

Recommended Parking Division Operating Costs

It has been recommended that the newly created Parking Division should have a parking manager, 1 ½ parking enforcement officers, and a portion (assume 1/2) of the salary associated with a meter maintenance and meter revenue collection technician. If the Parking Division falls within the Department of Public Works as has been recommended, the cost associated with the meter maintenance/meter revenue collection technician would be realized under the Department's overall budget. The Division's budget should also include staffing of the Town Hall Garage already included in the Department of Public Works. In addition to personnel and benefits costs, the parking division must anticipate some hardware, software, and administrative costs, most

notably the purchase and utilization of a handheld ticket issuance system. Table 12 illustrates an anticipated first year operational budget based on the recommended organizational structure, which also identifies the cost for non-recurring capital items such as motor vehicles for parking enforcement staff.

Table 12
Anticipated First Year Operating Budget

	<u>Annual Expenses</u>	<u>One-Time Capital Expense</u>
Salaries	\$125,000	----
Benefits (32%)	\$ 40,000	----
Overtime (5%)	\$ 6,300	----
1 Enforcement/Fleet Vehicle	----	\$20,000
Fuel	\$ 1,000	----
Hangtag/Permit Cost	\$ 3,000	----
Handheld Ticket Issuance System	----	\$40,000
Computers	----	\$ 7,000
Replacement Meter Mechanisms	----	\$23,400
Uniforms	\$ 1,000	----
Misc. Office Supplies	<u>\$ 1,200</u>	<u>----</u>
	\$177,500	\$ 90,400

It should be noted that some of the identified operational costs might already be realized under the present method of operation. However, to properly evaluate the cost of consolidating the parking program it is critical to identify all costs.

Excluding debt service costs of existing and/or future parking facilities, it could be estimated that the parking system would cost approximately \$292,700 annually (\$115,200 plus \$177,500).

Based on the 880 spaces that are metered (156), in public lots (127), or in the Town Hall Garage (387), that cost would equate to \$437 per space per year.

Annual Debt Service Payment on the Town Hall Garage and for the Liberty Street Lot and Pennington Lot Improvements

Concepts presented earlier (see Exhibit 9 and 10) noted costs of \$361,300 for the Liberty Lot improvements and \$544,000 for the Pennington Lot expansion. Though these expansion and improvement projects may be implemented incrementally over time, starting with the Liberty Lot,

the construction cost and debt service cost figures are based on Year 2004 dollars for purposes of this analysis. Presuming a 5.0% interest rate and a 20 year term for both projects, the annual debt service payment for the Pennington Lot is estimated at \$43,600 and the annual debt service payment for the Liberty Street Lot is estimated at \$29,000. Additionally, the Town's General Fund is already responsible for approximately \$400,000 in annual debt service payments on the existing Town Hall Garage.

The Parking Division's enterprise fund would, under this scenario, be responsible for an additional \$472,600 in debt service payments. Taking into consideration the 187 additional spaces in the expanded Pennington Lot and its \$50 per space per year maintenance costs, the overall parking system would cost the Town of Leesburg \$765,300 annually to develop (debt service), operate, and maintain. Including the Pennington Lot, this would equate to \$870 per space per year.

Potential Public Off-Street and On-Street (Meters) Revenue

To determine the parking system's fiscal strengths and weaknesses, the annual per space cost with (\$870) and without (\$437) debt service expenses could simply be compared to the Year 2002 average per meter or per space (Town Hall Garage) revenue figures that were provided. Based on the number of metered spaces and the FY Year 2001 revenue (\$34,618) it was determined that the average metered space generated \$222 per year. The Town Hall Garage generated \$114,723 in revenue for Year 2003. Based on the 387 spaces in that facility, the average space generates \$297 per year. Based on the simple average per space comparison it is obvious that current revenues would not support either parking operating costs or operating and debt service costs.

However, earlier rate recommendations that are aimed at improving the distribution of parking demand between core on-street spaces and publicly available but peripheral surface lots (Liberty and Pennington) could represent the balance necessary to meet costs under one or both of the cost scenarios. Furthermore, the \$222 per space per meter revenue that was generated in Year 2002 was done so in an environment where enforcement was less than desired and where 15% of the meters were observed to be in violation ("unfed").

It was noted previously that meter revenue for the Year 2002 was \$34,618. If meter revenue were to increase by 15% by reducing or eliminating non-meter feeding violations, the annual revenue would increase to \$39,800, roughly speaking. If parking meter rates were increased from \$0.25 per hour to \$0.50 per hour and assuming that the utilization of spaces remains the same, the annual meter parking revenue would increase to \$79,600. Combined with the roughly \$115,000 that the Town Hall Garage generates annually, the total parking system revenue could equal \$194,600. Additionally, if Town Hall Garage permit rates are increased from \$35 (group permit) and \$50 (individual permit) per month to \$60 per month, and presuming that the number of permits purchased would remain at 70 (group) and 61 (individual) respectively, then the Town Hall Garage annual permit revenue would increase from \$66,000 to \$94,320, or \$28,320. If more spaces in Town Hall Garage become available to short-term parkers through the relocation of City Hall employee and fleet vehicles it would be presumed that the hourly parking revenue generated by that facility would increase. However, it would be premature to calculate such revenue as this study already assumes that the supply of available on-street metered spaces would increase through the relocation of long-term parking in those spaces (through rates and enforcement).

Unfortunately, even with significant meter and off-street (Town Hall Garage) rate increases, it would appear that the Parking Division could not be formed under the enterprise fund definition because of the significant annual debt payment associated with the Town Hall Garage. However, it appears that the parking revenue that could be generated (\$222,920 estimate) would cover the base parking management and operations costs (\$177,500) and a significant portion that that departments one-time capital expenditures for equipment and meter upgrades.

Parking System's Financial Feasibility & Alternative Funding Strategies

As just noted, the parking revenue that could be generated by the parking meters and the Town Hall Garage is insufficient to support either the anticipated management/operation cost (\$292,700) or the management/operation and debt service cost (\$765,300). This is the realism of public parking infrastructure. The cost to develop and maintain a parking system is almost always greater than the revenue that can be generated. Municipalities that can pay for the basic operations and maintenance costs are "ahead of the curve". Some municipalities can even fund the development of additional parking facilities by using the enterprise or revenue bond capabilities, i.e., existing revenue generating facilities are paid for and have no debt associated

with them. This is why parking structures are best viewed as a utility or as public infrastructure. Parking's value is not in the direct revenues or profits that it generates, but in the added value it provides to nearby/adjacent land use activities. Like roads, sewers, and electrical utilities, parking provides a basic public service, increases the viability or success of a particular activity (offices, shops, restaurants, etc.), and, in turn, increases the revenue stream associated with property and sales taxes. While DESMAN is not qualified to assess the tax implications, a review of basic financial strategies that the Town can explore is required.

These options were selected based on a detailed evaluation of similar municipalities which have implemented similar financial programs for the purpose of establishing a parking facility.

General Obligation Bonds - The primary advantage of financing the parking facility through General Obligation Bonds (GO Bonds) is that a low rate of interest can be obtained because the full faith and credit of the municipality will be pledged toward retirement of the bonds. Because the basis of a city/town's credit is its taxing powers, constitutional and statutory laws usually limit the amounts that local governments may borrow using GO Bonds. The borrowing limits are usually expressed in terms of a specific percentage of the assessed value of the community's taxable property. A possible disadvantage in using GO Bonds is that the potential credit available for non-parking purposes, such as parks and public buildings, would be reduced by the amount of the bond issue used for a parking facility. Advocates, however, stress that the tax base of the downtown core is being strengthened by the development of a needed parking facility just as it is strengthened by other public infrastructure.

Revenue Bonds - Through the development of a public benefit, nonprofit corporation, such as a parking authority, established to develop and assist in the growth and maintenance of commercial facilities with the municipality's revenue bonds may be obtained. Such an authority would have the ability to receive public property from the municipality to be used on a project which would promote the welfare of the community, stabilize the local economy, and provide employment. Furthermore, this authority would be empowered to issue Revenue Bonds for the purpose of purchasing the necessary property and financing the public project. Revenues from the project would be used to meet the annual operating costs and debt service payments.

Unfortunately, this option relies heavily upon the facility's ability to support its own operations and debt payment through the revenues that facility generates. The initial estimates of the cost of construction, operation and maintenance, and general revenues for the Town's parking system indicated that such internal support does not appear sufficient.

Tax Increment Financing / Special Tax Districts - Tax Increment Financing (TIFs) has been authorized by the state legislation to permit a certain portion of a municipal property tax levied on property in a designated development district to be placed in a special fund to be applied to the repayment of bonds. The benefit of such legislation creates a taxing district where tax revenues may be applied toward the creation of public facilities which would directly benefit those businesses that exist within the tax district.

These tax districts, however, would draw revenues away from the general fund, thereby lowering the amount of revenue which supports other publicly funding activities such as police and fire, education, park and recreation, etc.

Joint Ventures and Contributions - Various public, nonprofit and private interests can participate in the financial support of a parking system. Capital contributions and in-kind contributions (such as land) can "write down" the cost of development. Joint ventures can effectively write down capital costs to the extent that revenue bond financing and/or conventional financing may be procured.

This may represent the most realistic opportunity for the Town of Leesburg to balance its parking costs and revenues. Note that monthly/permit parking in either the Pennington Lot or the Liberty Lot did not generate any parking revenue in the earlier discussion. Various employers, including Loudoun County, may be willing (or required) to participate in the parking system if their employees depend upon these lots. The County has already shown a willingness to participate in parking solutions as they share their Pennington Lot with the general public. Many property/business owners do not have sufficient on-site parking for their employees or customers. If a conveniently located parking facility is made available for their employees through some low market rate permit program (say \$20-\$30 per month), private sector employers could be encourage to support the program. Unfortunately, no one can predict at this time whether such cooperative agreements with County and private sector interests can fund the difference between

the \$194,600 meter and Town Hall Garage revenue and the projected \$320,800 cost to management and maintain the parking system.

Section 6 – Implementation Program of Recommendations

Given the variety of topics that were covered during the course of this assignment, the necessary steps to meet basic parking management, maintenance, and development goals may have been lost. Though not an executive summary, the following bullets simplify the presentation of recommendations. Each represents a “rung” that is necessary to reach the next level of recommendation. Note, however, the recommendations present here represent a “package” of improvements that must be implemented together. These recommendations are not a menu of strategies to choose from, but a consolidated series of steps towards a better parking program.

Immediate Steps (0-6 months)

- Communicate with public reasons for parking improvements and changes through print media and public meetings. Provide six month’s notice prior to meter rate changes
- Upgrade parking signage and directional wayfinding
- Increase on-street meter rates from \$0.25/hour to \$0.50/hour (\$38,800 annual revenue increase)
- Simplify and unify meter rate structure to \$0.50/hour system wide
- Increase monthly permit rates in Town Hall Garage from \$35 (group permit) and \$50 (individual permit) per month to \$60 per month
- Increase fines for parking violations (fine revenue increase not anticipated or “desired”)
- Provide consistent staffing of Town Hall Garage between hours of 9AM and 5PM (parking after 5PM free of charge)

Near-Term Steps (6-18 months)

- Create a Parking Division and centralize all parking functions (\$177,500 budget)
- Hire a Parking Manager (included in Division budget)
- Hire one full-time and one part-parking parking enforcement manager (included in Division budget)
- Purchase fleet vehicle, computers, and handheld ticket issuance technology and supportive hardware and software (\$90,400 one-time capital cost)
- Re-institute merchant parking validation program (cost/revenue not estimated at this time)

- Eliminate 2-hour free parking in Town Hall Garage (additional revenue not estimated at this time)
- Install electronic meter heads (\$23,400 one-time capital cost)
- Improve parking revenue auditing procedures
- Introduce pedestrian “orientation” kiosks in lots/garage

Long-Term Steps (18 months – 2 years)

- Work with County and other area employers regarding an employee permit program.
- Work with County on cost sharing alternatives
- Evaluate “reasonableness” of a Special Tax Districts as a source of revenue to support the parking system
- Redevelop the Liberty Street Lot (\$361,400 construction cost).
- Expand the Pennington Street Lot (\$544,300 construction cost)

These are rather basic and comprehensive steps toward the development of an effective public parking system. However, there are many decisions that are related to each. Although this report does not map out the complex web of actions and reactions that ultimately occur in a public parking system, it does represent base and direction upon which effective decisions can be made.

APPENDIX EXHIBITS

Appendix Exhibit A					
Block	Lot Number	Capacity	Public	Private/Restricted	Restriction
1A	N/A	N/A		N/A	N/A
1	1a	11		11	None
	1b	136		136	2- handicap; 5 visitor parking - School
	1c	40		40	37 reserved parking
2	2a	13		13	Carriage House
3	3a	19		19	residential
4	4a	210	113	97	97-reserved permit parking - Red Lot
5	5a	24		24	20 private Physician Associates; 2 reserved; 2 handicap
	5b	56		56	21 private for Progressive and Jackson Professional Building; 2- 15 minute parking; 30 private LHI; 3 handicap
	5c	54		54	50- Physician Associates; 4 Handicap
	5d	145		145	5 Handicap; 140 Private
	5e	35		35	10 patient, 5 disabled, 1 employee of the month, 3 handicap, 16 fire marshal staff
	5f	27		27	LHI
	5g	75		75	67 reserved, 8 motor pool spaces - Loudoun County Hospital
	5h	16		16	1 handicap - Leesburg Associates
6	N/A	N/A			N/A
7	7a	40		40	3 clergy, 2 handicap - St. James Episcopal Church
	7b	22		22	Customer and tenants only; Violators will be towed at owners expense
	7c	10		10	client parking only
8	8a	6		6	patrons
	8b	10		10	designated by apartment number
9	9a	72		72	Court Parking only 8am-5pm M-F; Non-commercial Public Parking all other times; 1 Handicap Parking - County of Loudoun Parking Lot
10	10a	18		18	1 handicap - Balch Library
	10b	17		17	1 handicap, 16 residential parking - Sunrise Retirement Home
11	11a	7		7	1 handicap - Exxon
	11b	40		40	Exxon
	11c	4		4	none
12	12a	30		30	5 for Exxon, 3 bike shop, 6 petite décor, 2 private
	12b	6		6	reserved parking - Morgan Stanley & Title Research
	12c	30		30	patrons - Lightfoot Restaurant, Insane Ink
13	N/A	N/A		N/A	N/A
14	14a	19		19	client parking only - Elijah Care
	14b	11		11	client parking only - Welsh & Lanham Attorneys at Law
	14c	95		95	4 Handicap - Colonial Square Restricted Parking
	14d	18		18	patients only - Loudoun Family Practice
	14e	72		72	6 Handicap, 1 court security transport, 2 permit parking, 2 reserved commonwealth attorney, 3 reserved permit parking, 1 clerk of circuit court, 1 district court, 1 deputy commonwealth attorney, 1 JD& R clerk, 1 employee of the month, 1 juvenile court, 41 reserved, 11 permit parking only
15	N/A	N/A		N/A	N/A
16	16a	15		15	Kids Place Preschool
	16b	42		42	2 Reserved ADA
	16c	76		76	67 regular; 4 reserved; 4 reserved ADA; 1 staff only - First Mount Olive Baptist Church
17	17a	5		5	United Methodist Private Church
	17b	15		15	none
	17c	16		16	permit parking - Liberty House
18	18a	15		15	patrons -Caulkins Jewelers
	18b	4		4	patrons - BB&T
	18c	11		11	2 for Wangler patrons, 1 for CH Pearson, 1 for Colonial, 2 for Bills Bluff, 2 for Colonial Garden, 3 for parking loading zone 7am-6pm
	18d	387	290	97	Town Parking Garage - 97 permit/290 public- 2 hours free, \$.50/h there after, \$4 Max, \$50 Monthly Permit, Free Sat-Sun & Holidays & Shoppers with Validation 6AM-2AM
19	19a	15		15	Town and Country Realtors
	19b	10		10	none
	19c	22		22	reserved for King Street patrons
	19d	20		20	7 spaces for Johnston Antiques, 2 regular, 6 Public defender, 1 handicap, 4 law office of Sam Engle PC & clients
	19e	15		15	1 handicap, 5 "5 Minute Customer Parking"
	19f	16		16	1 reserved - Cambell, Miller & Zimmermar
	19g	20		20	permit parking - Loudoun Travel
	19h	9		9	none
	19i	84		84	employees only - Loudoun Times Mirror
	19j	24		24	patients / employees - Dr. Birkitt, and Loudoun Times Mirror

Block	Lot Number	Capacity	Public	Private/Restricted	Restriction
20a	20e	421		421	Harrison Street Parking Garage (88 visitor/333 permit) Mon-Fri 6AM-6PM
20b	20a	5		5	3 reserved for Board of Supervisors, 2 reserved for General Service;
	20b	10		10	1 handicap, and all are customer parking only - Liberty Gas Station
	20c	10		10	customer parking - Mom's Apple Pie
	20d	15		15	tenants and guests only - Chosita Grill & Rescued Memories
21	21a	20		20	customers only - Gem
	21b	7		7	Carriage House
	21c	30		30	1 handicap - Barrister Building
	21d	30		30	E. Market only parking
22	22a	20		20	1 handicap - 7-11
	22b	48		48	1 handicap - Western Gateway
	22c	62		62	6 handicap - Volunteer Fire
	22d	15		15	1 handicap - Mathis M.D.
	22e	18		18	none
	22f	10		10	Adventures Inc.
	22g	15		15	Rosenthal & Rosenthal
	22h	116	82	34	34 County Permit Parking 8am-5pm M-F. 48 hr. parking only
	22i	11	11		11 metered - 3 HR - \$.35
23	23b	8		8	patients / employees - Fakbar MD
	23c	8		8	patients / employees - Fakbar MD
24	24a	21		21	none
	24b	15		15	permit only - M&J of Loudoun, LLC
	24c	27		27	permit only - Loudon Tenants only
	24d	12		12	tenants only - Royal St.
	24e	8		8	permit only
	24f	6		6	none
	24g	3		3	none
	24h	8		8	none
	24i	8		8	permit only - S. King Parking
	24j	4		4	none
25	25a	9		9	none - Coffee Shop
	25b	8		8	none - Black Shutter Dealer
	25c	6		6	none - Norman Myers Realty
	25d	18		18	none
	25e	25		25	none
	25f	10		10	none
	25g	11		11	none
	25h	7		7	For 18 Royal St. only
26	26a	25		25	PHR only - Patton Harris Rust
	26b	7		7	customer only
	26c	45		45	authorized parking only
	26d	59		59	Market Station only; 15 "30 min", 2 credit union only, 1 handicap
	26e	17		17	2 hr limit, 2 handicap
27	27a	16		16	spaces for rent
	27b	5		5	IAP
	27c	4		4	Travel Center
	27d	6		6	Something Special Shoppe
28	27a	8		8	Gravel Lot
29	29a	15		15	none
	29b	3		3	ENG Group
	29c	21		21	none
	29d	6		6	2 Handicap
	29e	18		18	Impound Lot
	29f	3		3	none
	29g	21		21	DOC
	29h	22		22	Car Repair Lot

Block	Lot Number	Capacity	Public	Private/Restricted	Restriction
30	30a	8		8	Battery Warehouse
	30b	7		7	Floors of Loudon
	30c	5		5	Interfaith Relief
	30d	34		34	Arts Center
	30e	8		8	Loudoun Arts Academy
	30f	12		12	none
	30g	29		29	none
	30h	14		14	Law Office
	30i	2		2	none
	30j	8		8	Dentist
	30k	2		2	none
31	31a	16		16	none
32	32a	26		26	residents only
	32b	55		55	1 handicap
	32c	63		63	none
	32d	34		34	1 handicap - Bowman
	32e	38		38	7 "30 min" parking, 2 handicap - Market Station
33	33a	30		30	2 handicap
	33b	54		54	3 handicap
Total (Approx.)		4,040	496 12%	3,544 88%	

Appendix Exhibit B								
Block	Lot Number	Capacity	Public/Private	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
1A	N/A	---	---	---	---	---	---	---
1	1a	11	Private	0	2	2	0	0
	1b	136	Private	54	109	109	109	50
	1c	40	Private	16	30	30	30	10
2	2a	13	Private	1	3	5	5	0
3	3a	19	Private	15	16	19	19	5
4	4a	97	Private	20	15	12	14	9
		113	Public	32	28	30	27	16
5	5a	24	Private	17	19	19	15	5
	5b	56	Private	37	45	45	41	10
	5c	54	Private	30	43	43	40	10
	5d	145	Private	55	116	116	100	35
	5e	35	Private	5	28	28	23	5
	5f	27	Private	5	22	22	18	5
	5g	75	Private	25	60	60	55	15
	5h	16	Private	2	4	5	4	0
6	N/A	---	---	---	---	---	---	---
7	7a	40	Private	5	18	20	18	5
	7b	22	Private	2	10	11	10	2
	7c	10	Private	1	3	3	3	1
8	8a	6	Private	2	2	2	2	2
	8b	10	Private	3	4	5	5	3
9	9a	72	Private	49	55	64	61	16
10	10a	18	Private	5	8	8	8	4
	10b	17	Private	5	7	8	7	4
11	11a	7	Private	4	5	5	4	4
	11b	40	Private	18	22	30	30	18
	11c	4	Private	2	3	3	3	2
12	12a	30	Private	5	10	12	12	8
	12b	6	Private	2	2	2	2	2
	12c	30	Private	5	15	22	15	22
13	N/A	N/A	---	---	---	---	---	---
14	14a	19	Private	8	13	13	11	5
	14b	11	Private	4	8	8	5	2
	14c	95	Private	58	60	75	70	30
	14d	18	Private	5	10	12	10	3
	14e	72	Private	50	55	65	60	15
15	N/A	N/A	---	---	---	---	---	---
16	16a	15	Private	7	8	9	8	2
	16b	42	Private	3	5	5	4	0
	16c	76	Private	2	2	3	2	0
17	17a	5	Private	2	3	3	2	2
	17b	15	Private	13	14	14	14	10
	17c	16	Private	10	13	13	10	9
18	18a	15	Private	5	13	13	5	8
	18b	4	Private	2	3	4	2	2
	18c	11	Private	5	8	8	7	8
	18d	97	Private	64	58	62	64	24
		290	Public	190	196	215	222	98

Block	Lot Number	Capacity	Public/Private	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
19	19a	15	Private	8	12	12	8	4
	19b	10	Private	4	8	8	4	2
	19c	22	Private	13	17	17	13	4
	19d	20	Private	11	15	15	11	4
	19e	15	Private	8	12	12	8	2
	19f	16	Private	8	12	12	8	2
	19g	20	Private	11	15	15	11	4
	19h	9	Private	3	7	7	3	1
	19i	84	Private	68	72	72	68	32
	19j	24	Private	16	20	20	16	6
20a	20e	421	Private	387	320	372	364	101
20b	20a	5	Private	2	3	3	2	3
	20b	10	Private	2	4	4	2	2
	20c	10	Private	5	9	9	5	6
	20d	15	Private	8	12	12	8	8
21	21a	20	Private	3	10	10	10	1
	21b	7	Private	2	5	5	5	0
	21c	30	Private	7	15	15	15	5
	21d	30	Private	7	15	15	15	5
22	22a	20	Private	5	8	9	5	9
	22b	48	Private	15	24	24	15	6
	22c	62	Private	17	31	31	17	7
	22d	15	Private	7	8	8	7	4
	22e	18	Private	7	9	9	7	4
	22f	10	Private	3	5	5	3	1
	22g	15	Private	6	8	8	6	3
	22h	34	Private	2	1	0	1	2
		82	Public	31	33	30	33	23
	22i	11	Public	8	11	11	8	5
23	23b	8	Private	5	4	5	5	3
	23c	8	Private	5	4	5	5	3
24	24a	21	Private	12	16	16	14	5
	24b	15	Private	8	12	12	10	2
	24c	27	Private	16	20	20	18	3
	24d	12	Private	7	9	9	8	2
	24e	8	Private	4	6	6	5	1
	24f	6	Private	3	4	4	4	1
	24g	3	Private	1	1	1	1	0
	24h	8	Private	4	6	6	5	1
	24i	8	Private	4	6	6	5	1
	24j	4	Private	1	1	1	1	0
25	25a	9	Private	5	7	7	5	3
	25b	8	Private	4	6	6	4	2
	25c	6	Private	2	4	4	2	1
	25d	18	Private	13	15	15	13	5
	25e	25	Private	14	20	20	14	5
	25f	10	Private	6	8	8	6	3
	25g	11	Private	6	9	9	6	3
	25h	7	Private	3	4	4	3	1
26	26a	25	Private	18	20	20	18	8
	26b	7	Private	4	5	5	4	2
	26c	45	Private	30	34	34	30	12
	26d	59	Private	40	44	44	40	14
	26e	17	Private	13	15	15	13	6

Block	Lot Number	Capacity	Public/Private	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
27	27a	16	Private	3	7	7	7	3
	27b	5	Private	2	4	4	4	2
	27c	4	Private	1	3	3	3	1
	27d	6	Private	2	5	5	5	2
28	28a	8	Private	3	6	6	6	3
29	29a	15	Private	4	8	8	8	4
	29b	3	Private	1	3	3	3	1
	29c	21	Private	8	11	11	11	8
	29d	6	Private	3	5	5	5	3
	29e	18	Private	6	8	8	8	6
	29f	3	Private	1	3	3	3	1
	29g	21	Private	5	11	11	11	5
	29h	22	Private	5	11	11	11	5
30	30a	8	Private	4	5	6	5	2
	30b	7	Private	4	5	6	5	2
	30c	5	Private	2	3	4	3	2
	30d	34	Private	15	24	26	24	15
	30e	8	Private	4	5	6	5	2
	30f	12	Private	4	7	9	7	3
	30g	29	Private	15	22	22	22	10
	30h	14	Private	7	10	10	10	4
	30i	2	Private	1	1	1	1	1
	30j	8	Private	4	5	6	5	2
	30k	2	Private	1	1	1	1	1
31	31a	16	Private	5	8	14	8	5
32	32a	26	Private	13	8	8	8	13
	32b	55	Private	15	21	21	21	8
	32c	63	Private	10	15	15	15	6
	32d	34	Private	12	16	16	16	5
	32e	38	Private	30	32	32	32	15
33	33a	30	Private	10	15	15	15	8
	33b	54	Private	10	15	15	15	8
Total (Approx.)		4,040	---	1,415 35%	2,477 61%	2,632 65%	2,397 59%	986 24%

Appendix Exhibit C

BLOCK	STREET- DIRECTION	CAPACITY	NONMETERED	METERED	LOADING ZONE	RESTRICTIONS
1A	North	NA				N/A
	East	N/P				No Parking
	South	N/P				No Parking
	West	NA				N/A
1	North	N/A				N/A
	East	N/P				No Parking
	South	N/A				N/A
	West	N/A				N/A
2	North	12	12			4-reserved; 1handicap
	East	N/P				No Parking
	South	10	10			Permit Parking M-F 9-5pm
	West	16	16			none
3	North	N/A				N/A
	East	7	7			none
	South	-----				no parking except Sunday; reserved parking
	West	28	28			none
4	North	N/A				N/A
	East	N/A				N/A
	South	20	20			none
	West	3	3			none
5	North	19	19			none
	East	6	6			none
	South	38	38			none
	West	N/P				No Parking
6	North	N/P				No Parking
	East	N/P				No Parking
	South	8	8			none
	West	N/P				No Parking
7	North	N/P				No Parking
	East	9		9		2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays
	South	N/P				No Parking
	West	9	9			1 handicap
8	North	13	13			Permit Parking only, 1 compact car parking only
	East	N/P				No Parking
	South	16	16			1 reserved parking ADA/4hr. Parking
	West	N/P				No Parking
9	North	4	4			none
	East	N/P				No Parking
	South	7	7			none
	West	8	8			Permit Parking
10	North	30	30			none
	East	14	14			none
	South	N/P				No Parking
	West	14	14			none
11	North	N/P				No Parking
	East	N/P				No Parking
	South	N/P				No Parking
	West	N/P				No Parking
12	North	16	16			1 reserved parking ADA/4hr. Parking
	East	14		12	2	12 - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, loading zone 7 am- 6pm, no parking 2am-6am, passenger loading zone no parking 5pm-6am.
	South	N/P				No Parking
	West	13	11	2		2 metered parking

BLOCK	STREET- DIRECTION	CAPACITY	NONMETERED	METERED	LOADING ZONE	RESTRICTIONS
13	North	N/P				No Parking
	East	N/P				No Parking
	South	N/P				No Parking
	West	N/P				No Parking
14	North	8	8			none
	Northwest	10	10			none
	East	8	8			none
	South	13	13			11 on street with 2 handicap
	West	N/P				No Parking
15	North	N/P				No Parking
	Northeast	20	20			none
	East	N/A				N/A
	South	30	30			none
16	West	N/P				No Parking
	North	22	16	6		3 double, \$.35 - 3 Hr. Meter and the rest do not
	East	N/P				No Parking
	South	26	26			1 reserved parking and part of the street is no parking
17	West	13	13			none
	North	5		5		2 double, 1 single - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays
	East					no parking except Sunday; no parking 15 minute loading zone 6am-2pm Mon-Sat
	South	N/P				No Parking
18	West	15	15			none
	North	10		9	1	3 single, 3 doubles - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, no parking loading zone between 7am-6pm, 1 compact car only
	East	13		12	1	4 singles, 4 double - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, no parking between 2 am- 6am, no parking loading zone 7am-6pm
	South	7		6	1	2 singles, 2 double 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, Loading Zone
	West	4	1	3		1 double, 1 single - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, 30 minute Parking for Town Business only, no parking loading zone 6am-5pm M-F
	North	7		6	1	1 handicap, 2 single, 2 double - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, no parking between 2am-6am, no parking loading zone 7am-6pm
19	East	N/P				No Parking
	South	10		9	1	4 double, 1 single - 2 Hr. Meter 9AM - 6PM (\$.05-12 min., \$.10-24 min., \$.25-1 Hr) Free Saturday, Sunday and Holidays, no parking loading zone 7am-6pm
	West	N/P				No Parking
	North	N/P				No Parking
20a	East	N/P				No Parking
	South	N/P				No Parking
	West	N/P				No Parking
	North	N/P				No Parking
20b	East	N/A				N/A
	South	9	9			no parking on half the block and 9 spaces on the other half
	West	4		4		30 Min Max. Meter - \$.05 - 6 min, \$.10 - 12 min, \$.25 - 30 min
	North	N/P				No Parking
21	East	N/A				N/A
	South	N/P				No Parking
22	North	N/P				No Parking
	East	8	8			none
	South	N/A				W&O Trail
	West	7	7			none

BLOCK	STREET- DIRECTION	CAPACITY	NONMETERED	METERED	LOADING ZONE	RESTRICTIONS
23	North	N/P				No Parking
	East	N/P				No Parking
	South	9	9			none
24	West	N/P				No Parking
	North	N/P				No Parking
	East	N/P				No Parking
	South	5	5			5 on street, the rest was no parking
	West	N/P				No Parking
	North	N/P				No Parking
25	East	N/P				No Parking
	South	N/P				No Parking
	West	N/P				No Parking
26	North	N/P				No Parking
	East	8		8		2 Hr. Meter - \$.35
	South	N/P				No Parking
27	West	N/P				No Parking
	North	4		4		3 HR - \$.35
	East	N/P				No Parking
	South	N/P				No Parking
	West	3		3		2 Hr. Meter - \$.35
	North	7		7		3 Hr. Meter - \$.35
28	East	N/A				N/A
	South	N/P				No Parking
	West	N/P				No Parking
29	North	12	12			1 handicap
	East	4	3		1	loading zone on part of the street
	South	N/P				No Parking
30	West	N/P				No Parking
	North	14	14			none
	East	10	10			none
	South	N/A				W&O Trail
	West	4		4		
31	North	N/P				No Parking
	East	N/A				N/A
	South	N/P				No Parking
	West	4		4		2 Hr. Meter - \$.35
	North	5	5			none
	East	17		17		3 Hr. Meter - \$.35
32	South	N/A				W&O Trail
	West	N/P				No Parking
	North	20	20			none
33	East	N/A				N/A
	South	N/A				W&O Trail
	West	15		15		3 Hr. Meter - \$.35
Total (Approx.)		724	571 79%	145 20%	8 1%	

Appendix Exhibit D											
Block	Street-Direction	Capacity	90% Practical Capacity	Nonmetered	Metered	Loading Zone	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
1A	North	NA									
	East	N/P									
	South	N/P									
	West	NA									
1	North	N/A									
	East	N/P									
	South	N/A									
	West	N/A									
2	North	12	11	12			2	3	3	3	4
	East	N/P									
	South	10	9	10			5	1	1	2	2
	West	16	14	16			9	3	3	3	3
3	North	N/A									
	East	7	6	7			5	6	5	3	3
	South	N/P									
	West	28	25	28			10	8	8	13	10
4	North	N/A									
	East	N/A									
	South	20	18	20			6	7	8	7	3
	West	3	3	3			2	3	3	2	1
5	North	19	17	19			8	7	7	7	7
	East	6	5	6			5	5	5	5	4
	South	38	34	38			4	6	6	3	6
	West	N/P									
6	North	N/P									
	East	N/P									
	South	8	7	8			8	8	7	7	3
	West	N/P									
7	North	N/P									
	East	9	8		9		8	4	9	9	5
	South	N/P									
	West	9	8	9			6	6	6	6	4
8	North	13	12	13			7	8	8	9	8
	East	N/P									
	South	16	14	16			15	14	13	13	5
	West	N/P									
9	North	4	4	4			4	4	4	4	0
	East	N/P									
	South	7	6	7			5	6	5	6	0
	West	8	7	8			7	5	4	4	3
10	North	30	27	30			4	3	2	2	2
	East	14	13	14			11	11	10	9	7
	South	N/P									
	West	14	13	14			3	2	2	2	3
11	North	N/P									
	East	N/P									
	South	N/P									
	West	N/P									
12	North	16	14	16			16	15	15	15	2
	East	14	13		12	2	12	12	10	11	8
	South	N/P									
	West	13	12	11	2		7	7	8	9	5
13	North	N/P									
	East	N/P									
	South	N/P									
	West	N/P									
14	North	8	7	8			1	0	0	0	0
	Northwest	10	9	10			5	6	4	9	2
	East	8	7	8			2	1	3	0	2
	South	13	12	13			9	9	10	10	9
	West	N/P									
15	North	N/P									
	Northeast	20	18	20			9	8	8	9	10
	East	N/P									
	South	30	27	30			10	9	9	9	11
	West	N/P									
16	North	22	20	16	6		6	12	12	6	6
	East	N/P									
	South	26	23	26			10	12	15	9	9
	West	13	12	13			7	8	4	2	3

Block	Street-Direction	Capacity	90% Practical Capacity	Nonmetered	Metered	Loading Zone	9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM
17	North	5	5		5		2	3	2	3	2
	East	-----									
	South	N/P									
	West	15	14	15			9	11	10	10	9
18	North	10	9		9	1	6	7	7	7	6
	East	13	12		12	1	16	15	13	11	10
	South	7	6		6	1	4	6	5	4	4
	West	4	4	1	3		3	3	4	3	3
19	North	7	6		6	1	5	6	7	7	1
	East	N/P									
	South	10	9		9	1	2	5	9	5	8
	West	N/P									
20a	North	N/P									
	East	N/P									
	South	N/P									
	West	N/P									
20b	North	N/P									
	East	N/A									
	South	9	8	9			3	4	2	3	6
	West	4	4		4		3	1	2	4	0
21	North	N/P									
	East	N/A									
	South	N/P									
22	North	N/P									
	East	8	7	8			7	7	6	8	7
	South	N/A									
	West	7	6	7			4	3	4	4	3
23	North	N/P									
	East	N/P									
	South	9	8	9			8	7	7	7	7
	West	N/P									
24	North	N/P									
	East	N/P									
	South	5	5	5			3	3	3	3	3
	West	N/P									
25	North	N/P									
	East	N/P									
	South	N/P									
	West	N/P									
26	North	N/P									
	East	8	7		8		2	4	5	4	5
	South	N/P									
	West	N/P									
27	North	4	4		4		2	2	2	1	1
	East	N/P									
	South	N/P									
	West	3	3		3		2	0	2	1	0
28	North	7	6		7		0	1	4	2	0
	East	N/A									
	South	N/P									
	West	N/P									
29	North	12	11	12			7	9	10	11	9
	East	4	4	3		1	2	2	2	2	2
	South	N/P									
	West	N/P									
30	North	14	13	14			14	12	9	12	10
	East	10	9	10			7	5	4	7	6
	South	N/A									
	West	4	4		4		1	0	1	1	2
31	North	N/P									
	East	N/A									
	South	N/P									
	West	4	4		4		0	4	5	3	4
32	North	5	5	5			5	4	5	5	5
	East	17	15		17		9	5	5	6	6
	South	N/A									
	West	N/A									
33	North	20	18	20			16	18	18	17	17
	East	N/A									
	South	N/A									
	West	15	14		15		4	8	7	8	8
Total (Approx.)		724	652	571	145	8	374 52%	374 52%	377 52%	367 51%	294 41%